Vantage CNM

Centralized Network Management

User's Guide

Version 3.0
11/2007
Edition 1

ZyXEL

www.zyxel.com

About This User's Guide

The screens in Vantage CNM vary by device type and firmware version. The examples in this User's Guide use one of the most comprehensive examples of each screen, not every variation for each device type and firmware version. If you are unable to find a specific screen or field in this User's Guide, please see the User's Guide for the device for more information.

Intended Audience

This manual is intended for people who want to configure Vantage CNM using the web configurator. You should have at least a basic knowledge of TCP/IP networking concepts, topology, and the devices you want to manage.

Related Documentation

- Quick Start Guide

  The Quick Start Guide is designed to help you get up and running right away. It contains information on setting up and connecting to your software.
- Web Configurator Online Help

  Embedded web help for descriptions of individual screens and supplementary information.

It is recommended you use the web configurator to configure the Vantage CNM.

- Device User's Guide

  The User's Guide for each device provides more information about the device, its features, and its configuration.
- ZyXEL Web Site

  Please refer to www.zyxel.com for additional support documentation and product certifications.

User Guide Feedback

Help us help you. Send all User Guide-related comments, questions or suggestions for improvement to the following address, or use e-mail instead. Thank you!

The Technical Writing Team,
ZyXEL Communications Corp.,
6 Innovation Road II,
Science-Based Industrial Park,
Hsinchu, 300, Taiwan.

E-mail: techwriters@zyxel.com.tw

Document Conventions

Warnings and Notes

These are how warnings and notes are shown in this User's Guide.

Warnings tell you about things that could harm you or your device.

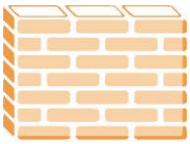
Notes tell you other important information (for example, other things you may need to configure or helpful tips) or recommendations.

Syntax Conventions

- Vantage CNM may be referred to as "Vantage CNM" or the "product" in this User's Guide.
- Vantage Report may be referred to as "Vantage Report" or "VRPT" in this User's Guide.
- A device that is managed by Vantage CNM may be referred to as the "ZyXEL device," "device," or the "system" in this User's Guide.
- Product labels, screen names, field labels and field choices are all in **bold** font.
- A key stroke is denoted by square brackets and uppercase text, for example, [ENTER] means the "enter" or "return" key on your keyboard.
- "Enter" means for you to type one or more characters and then press the [ENTER] key. "Select" or "choose" means for you to use one of the predefined choices.
- A right angle bracket (>) within a screen name denotes a mouse click. For example, **Maintenance > Log > Log Setting** means you first click **Maintenance** in the navigation panel, then the **Log** sub menu and finally the **Log Setting** tab to get to that screen.
- Units of measurement may denote the "metric" value or the "scientific" value. For example, "k" for kilo may denote "1000" or "1024", "M" for mega may denote "1000000" or "1048576" and so on.
- "e.g.," is a shorthand for "for instance", and "i.e.," means "that is" or "in other words".

Icons Used in Figures

Figures in this User's Guide may use the following generic icons. Device icons are not an exact representations of your devices.

Device (example)	Computer	Notebook computer
Server	DSLAM	
Telephone	Switch	Router

Contents Overview

Introducing Vantage CNM 31

Introduction 33

GUI Introduction 35

Device Operation 51

Load or Save Building Blocks (BB) 53
Device General Settings 55
Device Network Settings 59
Device Security Settings 109
Device Advanced Settings 185
Device Log 209
Device Configuration Management 213
Firmware Management 235
License Management 241

VPN Management 247

VPN Community 249
Installation Report 255
VPN Monitor 257

Monitor 265

Device Status Monitor 267
Device HA Status Monitor 269
Device Alarm 271

Log & Report 277

Device Operation Report 279
CNM Logs 291
VRPT 293

CNM System Setting 297

CNM System Setting 299
Maintenance 313
Device Owner 315
Vantage CNM Software Upgrade 317
License Upgrade 319

About Vantage CNM 321

Account Management 323

Group 325
Account 329

Troubleshooting 333

Troubleshooting 335

Appendices and Index 339

About This User's Guide **3**

Document Conventions **5**

Contents Overview **7**

Chapter 1
Introducing Vantage CNM **31**

1.1 Overview 31
1.2 Ways to Manage Vantage CNM 32
1.3 Suggestions for Using Vantage CNM 32

Part I: Introduction **33**

Chapter 2
GUI Introduction **35**

2.1 Menu Bar 36
2.2 Title Bar 37
2.3 Device Window 37
2.3.1 Topology 37
2.3.2 Device Search 45
2.4 Navigation Panel and Configuration Window 45
2.5 Security Risk Pop-up Messages in Internet Explorer 7.0 48

Part II: Device Operation **51**

Chapter 3
Load or Save Building Blocks (BB) **53**

3.1 Load or Save BB 53

Chapter 4
Device General Settings **55**

4.0.1 System 55
4.0.2 Time Setting 56

Chapter 5
Device Network Settings **59**

5.1 LAN 59
5.2 LAN (Prestige) 62
5.2.1 Static DHCP 64
5.2.2 IP Alias 65

5.3 WAN General (ZyNOS ZyWALL) 67
5.3.1 WAN1 (ZyNOS ZyWALL with one WAN port) 69
5.3.2 WAN1 and WAN2 (ZyNOS ZyWALL with two WAN ports) 77
5.3.3 Dial Backup (ZyNOS ZyWALL) 85
5.3.4 Advanced Modem Setup (ZyNOS ZyWALL) 87
5.3.5 Edit Dial Backup (ZyNOS ZyWALL) 89
5.3.6 WAN Setup (Prestige) 91
5.3.7 WAN Backup (Prestige) 94
5.3.8 Advanced WAN Backup (Prestige) 97
5.3.9 Advanced Modem Setup (Prestige) 99
5.4 Wireless Card 99
5.4.1 Wireless and Wireless Security Settings 99
5.4.2 Advanced Wireless Security Settings 101
5.4.3 MAC Filter 106

Chapter 6
Device Security Settings 109

6.1 Firewall 109
6.1.1 Default Rule 109
6.1.2 Rule Summary 111
6.1.3 Add/Edit 113
6.1.4 Anti-Probing 116
6.1.5 Threshold 117
6.1.6 Service 119
6.1.7 Add/Edit Service 119
6.2 VPN 120
6.3 IPSec High Availability 121
6.3.1 VPN Tunnel Summary (VPN version 1.0) 121
6.3.2 VPN Rules (IKE) > Gateway Policy Add**/Edit** 122
6.3.3 VPN Rules (IKE) > Network Policy Add/Edit 128
6.3.4 VPN Rules (IKE) > Network Policy Move 133
6.3.5 VPN Rules (Manual) 134
6.3.6 VPN Rules (Manual) > Add/Edit 135
6.3.7 VPN Global Setting 138
6.4 Anti-Virus 140
6.4.1 General Anti-Virus Setup 140
6.5 Anti-Spam 142
6.5.1 Anti-Spam General Screen 142
6.5.2 Anti-Spam External DB Screen 145
6.6 Anti-Spam Lists Screen 147
6.6.1 Anti-Spam Lists Edit Screen 148
6.7 IDP 151
6.8 General Setup 151

6.9 IDP Signatures 152
6.9.1 Attack Types 152
6.9.2 Intrusion Severity 154
6.9.3 Signature Actions 154
6.9.4 Configuring IDP Signatures 155
6.9.5 Query View 157
6.10 Signature Update 159
6.11 Content Filter 161
6.12 Content Filter General Screen 161
6.13 Content Filter Policy 165
6.13.1 Content Filter Policy: General 166
6.13.2 Content Filter Policy: External Database 168
6.13.3 Content Filter Policy: Customization 175
6.13.4 Content Filter Policy: Schedule 177
6.14 Content Filter Objects 179
6.15 Content Filtering Cache 180
6.16 X Auth 181
6.17 Local User Database 181
6.18 RADIUS 182

Chapter 7
Device Advanced Settings 185

7.0.1 NAT 185
7.1 NAT 185
7.2 Port Forwarding 187
7.3 Address Mapping 189
7.3.1 Edit Address Mapping Rule 190
7.4 Trigger Port 191
7.4.1 Edit Trigger Port Rule 192
7.5 Static Route 193
7.6 Static Route 193
7.6.1 Edit Static Route 194
7.7 DNS 196
7.8 Address Record 196
7.8.1 Add/Edit an Address Record 196
7.9 Name Server Record 197
7.9.1 Add/Edit a Name Server Record 198
7.10 Cache 200
7.11 DDNS 200
7.12 DHCP 202
7.13 Remote MGMT 204
7.14 Remote MGMT 204

Chapter 8
Device Log 209

8.1 Device Log 209

Chapter 9
Device Configuration Management 213

9.1 Synchronization 213
9.2 Configuration File Management 214
9.2.1 Backup & Restore (Device) 215
9.2.2 Backup a Device 216
9.2.3 Backup & Restore (Folder) 218
9.2.4 Group Backup (Folder) 218
9.2.5 Group Restore (Folder) 220
9.3 Schedule List (Device) 221
9.4 Schedule List (Folder) 222
9.4.1 Add/Edit Schedule List (Folder) 223
9.5 Signature Profile Management 224
9.5.1 Backup & Restore 224
9.5.2 Signature Profile Backup (Device) 225
9.5.3 Signature Profile Restore (Folder) 226
9.5.4 Reset to Factory 227
9.6 Configuration Building Block 228
9.7 Add/Edit a Configuration BB 229
9.8 Component BB 232
9.9 Add/Edit/Save as a Component BB 232

Chapter 10
Firmware Management 235

10.1 Firmware List 235
10.1.1 Add Firmware 236
10.2 Scheduler List 237
10.3 Firmware Upgrade 237
10.3.1 Folder 238
10.3.2 Device 238
10.3.3 Device > Upgrade 239

Chapter 11
License Management 241

11.1 Service Activiation 241
11.1.1 Registration 241
11.1.2 Service 243
11.2 License Status 244
11.2.1 Activate/Upgrade License 245

11.3 Signature Status 245

Part III: VPN Management 247

Chapter 12
VPN Community 249

12.1 VPN Community 249
12.1.1 Add/Edit a VPN Community 250

Chapter 13
Installation Report 255

13.1 Installation Report 255
13.1.1 Show Detailed Installation Reportl 256

Chapter 14
VPN Monitor 257

14.1 VPN Monitor 257
14.2 By Community 257
14.2.1 By Community > Show Detail 258
14.2.2 By Community > Show Detail > Diagnostic 259
14.3 By Device 261
14.3.1 VPN Tunnel Status 261
14.3.2 Search Special Tunnel 261
14.3.3 SA Monitor 262

Part IV: Monitor 265

Chapter 15
Device Status Monitor 267

15.1 Device Status 267

Chapter 16
Device HA Status Monitor 269

16.1 Device HA Status 269

Chapter 17
Device Alarm 271

17.1 Device Alarm 271
17.1.1 Alarm Types 271
17.1.2 Alarm Classifications 271

17.1.3 Alarm States 272
17.1.4 Unresolved Alarms 272
17.1.5 Responded Alarm 273

Part V: Log & Report 277

Chapter 18
Device Operation Report 279

18.1 Firmware Upgrade Report 279
18.1.1 Firmware Report Details 280
18.2 Configuration Report 281
18.2.1 Configuration Report Details 282
18.3 Configuration File Backup Report 284
18.3.1 Configuration File Backup Report Details 285
18.4 Configuration File Restore Report 286
18.5 Signature Profile Backup Report 288
18.6 Signature Profile Restore Report 289

Chapter 19
CNM Logs 291

19.1 Vantage CNM Logs 291
19.1.1 CNM Logs 291

Chapter 20
VRPT 293

20.1 Vantage Report Overview 293
20.2 Vantage Report in Vantage CNM 294
20.3 Setting Up Vantage Report in Vantage CNM 294
20.4 Opening Vantage Report in Vantage CNM 295

Part VI: CNM System Setting 297

Chapter 21
CNM System Setting 299

21.1 Servers Configuration 299
21.1.1 Vantage CNM Server Public IP Address 301
21.2 Servers Status 301
21.3 User Access 302
21.4 Notifications 303
21.4.1 Notifications 304

21.5 Log Setting 305
21.6 VRPT Management 306
21.6.1 General 306
21.6.2 Add/Edit VRPT Management 307
21.7 Certificate Management Overview 308
21.7.1 Advantages of Certificates 308
21.7.2 Current Certificate Information 309
21.7.3 Create CSR 310
21.7.4 Import Certificate 311

Chapter 22
Maintenance 313

22.1 System Maintenance 313
22.1.1 Backup 314

Chapter 23
Device Owner 315

23.0.1 Add/Edit a Device Owner 315

Chapter 24
Vantage CNM Software Upgrade 317

Chapter 25
License Upgrade 319

25.0.1 License Upgrade 320

Chapter 26
About Vantage CNM 321

Part VII: Account Management 323

Chapter 27
Group 325

27.1 User Groups 325
27.1.1 Add User Group 326

Chapter 28
Account 329

28.0.1 “Root” Administrator 329
28.0.2 “Super” Administrators 329
28.1 User Account 329
28.2 Add/Edit an Administrator Account 330

Part VIII: Troubleshooting 333

Chapter 29
Troubleshooting 335

29.1 Vantage CNM Access and Login 335
29.2 Device Management 336
29.3 Device Firmware Management 336
29.4 Vantage Report 337

Part IX: Appendices and Index 339

Appendix A Product Specifications 341
Appendix B Setting up Your Computer's IP Address 345
Appendix C Pop-up Windows, Java Scripts and Java Permissions 361
Appendix D IP Addresses and Subnetting 367
Appendix E IP Address Assignment Conflicts 375
Appendix F Common Services 379
Appendix G Importing Certificates 383
Appendix H Open Software Announcements 393
Appendix I Legal Information 417
Appendix J Customer Support 419
Index 425

Figure 1 Vantage CNM Application 31
Figure 2 Main Screen 35
Figure 3 Device Window: Topology 37
Figure 4 Folder Right-Click Options 39
Figure 5 Device Window: Topology: Right Click to Add a Folder 39
Figure 6 Device Window: Topology: Add Folder 39
Figure 7 Device Window: Topology: Delete Folder Warning 40
Figure 8 Device Window: Topology: Edit Folder 40
Figure 9 Device Right-Click Options 41
Figure 10 Device Window: Topology: Right Click to Add/Edit a Device 41
Figure 11 Device Window: Topology: Add/Edit Device (ZyNOS) 42
Figure 12 Device Window: Topology: Add/Edit Device (ZLD) 42
Figure 13 Device Window: Topology: Delete Device Warning 44
Figure 14 Device Window: Topology: Re-associate a Device 44
Figure 15 Device Window: Topology: Delete Device Warning 45
Figure 16 Device Window: Search 45
Figure 17 CNM System Setting > Configuration > Certificate Management > Create CSR 49
Figure 18 CNM System Setting > Configuration > Certificate Management > Create CSR > CSR Key 49
Figure 19 CNM System Setting > Configuration > Certificate Management > Import Certificate 50
Figure 20 Pop-up Message in Internet Explorer 7.0 50
Figure 21 Device Operation > Device Configuration > Load or Save BB 53
Figure 22 Device Operation > Device Configuration > Load or Save BB > Load a BB 54
Figure 23 Device Operation > Device Configuration > Load or Save BB > Save as a BB 54
Figure 24 Device Operation > Device Configuration > General > System 55
Figure 25 Device Operation > Device Configuration > General > Time Setting 56
Figure 26 Example: Device Operation > Device Configuration > Network > Interface (ZLD) 59
Figure 27 Device Operation > Device Configuration > Network > LAN > LAN 60
Figure 28 Device Operation > Device Configuration > Network > LAN > LAN (Prestige) 63
Figure 29 Device Operation > Device Configuration > Network > LAN > Static DHCP 65
Figure 30 Device Operation > Device Configuration > Network > LAN > IP Alias 66
Figure 31 Device Operation > Device Configuration > Network > WAN > General (ZyWALL) 67
Figure 32 Device Operation > Device Configuration > Network > WAN > WAN1 (ZyNOS ZyWALL with one WAN port) 69
Figure 33 Warning Message When Select PPPoE 71
Figure 34 Device Operation > Device Configuration > Network > WAN > WAN1-PPPoE (ZyNOS ZyWALL with one WAN port) 72
Figure 35 Warning Message When Select PPTP 74
Figure 36 Device Operation > Device Configuration > Network > WAN > WAN1 - PPTP (ZyNOS ZyWALL with one WAN port) 75
Figure 37 Device Operation > Device Configuration > Network > WAN > WAN1/2 (ZyNOS ZyWALL with two WAN ports) 78
Figure 38 Device Operation > Device Configuration > Network > WAN > WAN1/2 - PPPoE (ZyNOS ZyWALL with two WAN ports) 80

Figure 39 Device Operation > Device Configuration > Network > WAN > WAN1/2 - PPTP (ZyNOS ZyWALL with two WAN ports) 83
Figure 40 Device Operation > Device Configuration > Network > WAN > Dial Backup (ZyNOS ZyWALL) 86
Figure 41 Device Operation > Device Configuration > Network > WAN > Dial Backup > Advanced (ZyNOS ZyWALL) 88
Figure 42 Device Operation > Device Configuration > Network > WAN > Dial Backup > Edit (ZyNOS ZyWALL) 90
Figure 43 Device Operation > Device Configuration > Network > WAN > Setup (Prestige) 92
Figure 44 Device Operation > Device Configuration > Network > WAN > Backup (Prestige) 95
Figure 45 Device Operation > Device Configuration > Network > WAN > Backup > Advanced (Prestige) 97
Figure 46 Device Operation > Device Configuration > Network > Wireless Card > Wireless Card 100
Figure 47 Device Operation > Device Configuration > Network > Wireless Card > Wireless Card (Advanced Wireless Security Settings) 102
Figure 48 Device Operation > Device Configuration > Network > Wireless Card > MAC Filter 107
Figure 49 Example: Device Operation > Device Configuration > VPN > IPSec VPN (ZLD) 109
Figure 50 Device Operation > Device Configuration > Security > Firewall > Default Rule 110
Figure 51 Device Operation > Device Configuration > Security > Firewall > Rule Summary 112
Figure 52 Device Operation > Device Configuration > Security > Firewall > Rule Summary > Edit 114
Figure 53 Device Operation > Device Configuration > Security > Firewall > Anti-Probing 116
Figure 54 Device Operation > Device Configuration > Security > Firewall > Threshold 117
Figure 55 Device Operation > Device Configuration > Security > Firewall > Service 119
Figure 56 Device Operation > Device Configuration > Security > Firewall > Service > Add/Edit 120
Figure 57 IPSec High Availability 121
Figure 58 Device Operation > Device Configuration > Security > VPN > VPN Rules (IKE) 122
Figure 59 Device Operation > Device Configuration > Security > VPN > VPN Rules (IKE) > Gateway Policy Add/Edit 123
Figure 60 Device Operation > Device Configuration > Security > VPN > VPN Rules (IKE) > Network Policy Add/Edit 129
Figure 61 Device Operation > Device Configuration > Security > VPN > VPN Rules (IKE) > Network Policy Move 133
Figure 62 Device Operation > Device Configuration > VPN > Manual-Key IPSec 134
Figure 63 Device Operation > Device Configuration > Security > VPN > VPN Rules (Manual) > Add/Edit 136
Figure 64 Device Operation > Device Configuration > Security > VPN > Global Setting 139
Figure 65 Device Operation > Device Configuration > Security > Anti-Virus > General 141
Figure 66 Device Operation > Device Configuration > Security > Anti-Spam > General 143
Figure 67 Device Operation > Device Configuration > Security > Anti-Spam > External DB 145
Figure 68 Device Operation > Device Configuration > Security > Anti-Spam > Lists 147
Figure 69 Device Operation > Device Configuration > Security > Anti-Spam > Lists > Add/Edit 149
Figure 70 Device Operation > Device Configuration > Security > IDP > General 151
Figure 71 Device Operation > Device Configuration > Security > IDP > Signature > Attack Types 153
Figure 72 Device Operation > Device Configuration > Security > IDP > Signature > Actions 154
Figure 73 Device Operation > Device Configuration > Security > IDP > Signature 155

Figure 74 Device Operation > Device Configuration > Security > IDP > Signature (Query View) 157
Figure 75 Device Operation > Device Configuration > Security > Signature Update 160
Figure 76 Device Operation > Device Configuration > Security > Content Filter > General 162
Figure 77 Device Operation > Device Configuration > Security > Content Filter > Policy 165
Figure 78 Device Operation > Device Configuration > Security > Content Filter > Policy > Add/General . 166
Figure 79 Device Operation > Device Configuration > Security > Content Filter > Policy > External Databasel 168
Figure 80 Device Operation > Device Configuration > Security > Content Filter > Policy > Customizationl 176
Figure 81 Device Operation > Device Configuration > Security > Content Filter > Policy > Schedulel 178
Figure 82 Device Operation > Device Configuration > Security > Content Filter > Object 179
Figure 83 Device Operation > Device Configuration > Security > Content Filter > Cache 181
Figure 84 Device Operation > Device Configuration > Security > X Auth > Local User 182
Figure 85 Device Operation > Device Configuration > Security > X Auth > RADIUS 183
Figure 86 Device Operation > Device Configuration > Advanced > NAT > NAT Overview 186
Figure 87 Device Operation > Device Configuration > Advanced > NAT > Port Forwarding 188
Figure 88 Device Operation > Device Configuration > Advanced > NAT > Address Mapping 189
Figure 89 Device Operation > Device Configuration > Advanced > NAT > Address Mapping > Edit ... 190
Figure 90 Device Operation > Device Configuration > Advanced > NAT > Trigger Port 191
Figure 91 Device Operation > Device Configuration > Advanced > NAT > Trigger Port > Edit 192
Figure 92 Device Operation > Device Configuration > Advanced > Static Route 194
Figure 93 Device Operation > Device Configuration > Advanced > Static Route > Edit 195
Figure 94 Device Operation > Device Configuration > Advanced > DNS > Address Record 196
Figure 95 Device Operation > Device Configuration > Advanced > DNS > Address Record > Add/Edit 197
Figure 96 Device Operation > Device Configuration > Advanced > DNS > Name Server Record 198
Figure 97 Device Operation > Device Configuration > Advanced > DNS > Name Server Record > Add/Edit 199
Figure 98 Device Operation > Device Configuration > Advanced > DNS > Cache 200
Figure 99 Device Operation > Device Configuration > Advanced > DNS > DDNS 201
Figure 100 Device Operation > Device Configuration > Advanced > DNS > DHCP 203
Figure 101 Device Operation > Device Configuration > Advanced > Remote Management 204
Figure 102 Device Operation > Device Configuration > Device Log > Log Settings 209
Figure 103 Device Operation > Configuration Management > Synchronization 213
Figure 104 Device Operation > Configuration Management > Synchronization (Customize) 214
Figure 105 Device Operation > Configuration Management > Configuration File Management > Backup & Restore (Device) 215
Figure 106 Device Operation > Configuration Management > Configuration File Management > Backup (Device) 217
Figure 107 Device Operation > Configuration Management > Configuration File Management > Backup & Restore (Folder) 218
Figure 108 Device Operation > Configuration Management >Configuration Management > Configuration File Management > Backup (Folder) 219
Figure 109 Device Operation > Configuration Management > Configuration File Management > Restore (Folder) 220

Figure 110 Device Operation > Configuration Management > Configuration File Management > Schedule List (Device) 221
Figure 111 Device Operation > Configuration Management > Configuration File Management > Schedule List (Folder) 222
Figure 112 Device Operation > Configuration Management > Configuration File Management > Schedule List (Folder) 223
Figure 113 Device Operation > Configuration Management > Signature Profile Management > Backup & Restore 225
Figure 114 Device Operation > Configuration Management > Signature Profile Management > Backup & Restore > Backup (Device) 226
Figure 115 Device Operation > Configuration Management > Signature Profile Management > Backup & Restore > Restore (Folder) 227
Figure 116 Device Operation > Configuration Management > Signature Profile Management > Reset to Factory 228
Figure 117 Device Operation > Configuration Management > Building Block > Configuration BB 228
Figure 118 Device Operation > Configuration Management > Building Block > Configuration BB > Add .. 229
Figure 119 Device Operation > Configuration Management > Building Block > Configuration BB > Edit .. 230
Figure 120 Device Operation > Configuration Management > Building Block > Configuration BB > Save as 230
Figure 121 Device Operation > Configuration Management > Building Block > Component BB 232
Figure 122 Device Operation > Configuration Management > Building Block > Component BB > Add/Edit/ Save as 233
Figure 123 Device Operation > Firmware Management > Firmware List 235
Figure 124 Device Operation > Firmware Management > Firmware List > Add 236
Figure 125 Device Operation > Firmware Management > Scheduler List 237
Figure 126 Device Operation > Firmware Management > Firmware Upgrade (Folder) 238
Figure 127 Device Operation > Firmware Management > Firmware Upgrade (Device) 238
Figure 128 Device Operation > Firmware Management > Firmware Upgrade (Device) > Upgrade 239
Figure 129 Device Operation > License Management > Service Activation > Registration 241
Figure 130 Device Operation > License Management > Service Activiation > Registration > Save as a BB 242
Figure 131 Device Operation > License Management > Service Activation > Service 243
Figure 132 Device Operation > License Management > License Status 244
Figure 133 Device Operation > License Management > License Status > Upgrade 245
Figure 134 Device Operation > License Management > Signature Status 246
Figure 135 VPN Management > VPN Community 249
Figure 136 VPN Management > VPN Community > Add/Edit 250
Figure 137 VPN Management > VPN Community > Add/Edit > Load a BB 251
Figure 138 VPN Management > VPN Community > Add/Edit > Save as a BB 251
Figure 139 VPN Community Types 251
Figure 140 VPN Management > Installation Report 255
Figure 141 VPN Management > Installation Report > Show Detail 256
Figure 142 VPN Management > VPN Monitor > By Community 257

Figure 143 VPN Management > VPN Monitor > By Community > Show Detail 258
Figure 144 VPN Management > VPN Monitor > By Community > Show Detail > Diagnostic 259
Figure 145 VPN Management > VPN Monitor > By Community > Show Detail > Diagnostic > Logs .. 260
Figure 146 VPN Management > VPN Monitor > By Device > VPN Tunnel Status 261
Figure 147 VPN Management > VPN Monitor > By Device > VPN Tunnel Status > Search Special Tunnel 262
Figure 148 VPN Management > VPN Monitor > By Device > SA Monitor 263
Figure 149 Monitor > Device Status 267
Figure 150 Monitor > Device HA Status 269
Figure 151 Monitor > Device Alarm > Unresolved Alarm 272
Figure 152 Monitor > Device Alarm > Responded Alarm 274
Figure 153 Log & Report > Operation Report > Firmware Upgrade Report (Device) 279
Figure 154 Log & Report > Operation Report > Firmware Upgrade Report (Group) 279
Figure 155 Log & Report > Operation Report > Firmware Upgrade Report (Group) > Show Detail 280
Figure 156 Log & Report > Operation Report > Configuration Report (Device) 281
Figure 157 Log & Report > Operation Report > Configuration Report (Group) 282
Figure 158 Log & Report > Operation Report > Configuration Report > Show Details 283
Figure 159 Log & Report > Operation Report > Configuration File Backup & Restore Report > Backup Report (Device) 284
Figure 160 Log & Report > Operation Report > Configuration File Backup & Restore Report > Backup Report (Group) 284
Figure 161 Log & Report > Operation Report > Configuration File Backup & Restore Report > Backup Report (Group) > Show Detail 286
Figure 162 Log & Report > Operation Report > Configuration File Backup & Restore Report > Restore Report (Device) 287
Figure 163 Log & Report > Operation Report > Configuration File Backup & Restore Report > Restore Report (Group) 287
Figure 164 Log & Report > Operation Report > Signature Profile Backup & Restore Report > Backup Report 288
Figure 165 Log & Report > Operation Report > Signature Profile Backup & Restore Report > Restore Report 289
Figure 166 Log & Report > CNM Logs 291
Figure 167 Typical Vantage Report Application 293
Figure 168 Vantage Report and Vantage CNM Architecture 294
Figure 169 Log & Report > VRPT (Vantage Report Main Screen) 295
Figure 170 CNM System Setting > Configuration > Servers > Configuration 300
Figure 171 CNM System Setting > Configuration > Servers > Status 302
Figure 172 CNM System Setting > Configuration > User Access 303
Figure 173 CNM System Setting > Configuration > Notification 304
Figure 174 CNM System Setting > Configuration > Log Setting 305
Figure 175 CNM System Setting > Configuration > VRPT Management 306
Figure 176 CNM System Setting > Configuration > VRPT Management > Add/Edit 307
Figure 177 CNM System Setting > Configuration > Certificate Management 309
Figure 178 CNM System Setting > Configuration > Certificate Management > Create CSR 310
Figure 179 CNM System Setting > Configuration > Certificate Management > Import Certificate 311

Figure 180 CNM System Setting > Maintenance > System 313
Figure 181 CNM System Setting > Maintenance > System > Backup 314
Figure 182 CNM System Setting > Device Owner 315
Figure 183 CNM System setting > Device Owner > Add/Edit 316
Figure 184 CNM System Setting > Upgrade 317
Figure 185 CNM System Setting > License 319
Figure 186 CNM System Setting > License > Upgrade 320
Figure 187 CNM System Setting > About 321
Figure 188 Account Management > Group 325
Figure 189 Account Management > Group > Add 326
Figure 190 Account Management > Account 330
Figure 191 Account Management > Account > Add/Edit 331
Figure 192 WIndows 95/98/Me: Network: Configuration 346
Figure 193 Windows 95/98/Me: TCP/IP Properties: IP Address 347
Figure 194 Windows 95/98/Me: TCP/IP Properties: DNS Configuration 348
Figure 195 Windows XP: Start Menu 349
Figure 196 Windows XP: Control Panel 349
Figure 197 Windows XP: Control Panel: Network Connections: Properties 350
Figure 198 Windows XP: Local Area Connection Properties 350
Figure 199 Windows XP: Internet Protocol (TCP/IP) Properties 351
Figure 200 Windows XP: Advanced TCP/IP Properties 352
Figure 201 Windows XP: Internet Protocol (TCP/IP) Properties 353
Figure 202 Macintosh OS 8/9: Apple Menu 354
Figure 203 Macintosh OS 8/9: TCP/IP 354
Figure 204 Macintosh OS X: Apple Menu 355
Figure 205 Macintosh OS X: Network 356
Figure 206 Red Hat 9.0: KDE: Network Configuration: Devices 357
Figure 207 Red Hat 9.0: KDE: Ethernet Device: General 357
Figure 208 Red Hat 9.0: KDE: Network Configuration: DNS 358
Figure 209 Red Hat 9.0: KDE: Network Configuration: Activate 358
Figure 210 Red Hat 9.0: Dynamic IP Address Setting in ifconfig-eth0 359
Figure 211 Red Hat 9.0: Static IP Address Setting in ifconfig-eth0 359
Figure 212 Red Hat 9.0: DNS Settings in resolv.conf 359
Figure 213 Red Hat 9.0: Restart Ethernet Card 359
Figure 214 Red Hat 9.0: Checking TCP/IP Properties 360
Figure 215 Pop-up Blocker 361
Figure 216 Internet Options: Privacy 362
Figure 217 Internet Options: Privacy 363
Figure 218 Pop-up Blocker Settings 363
Figure 219 Internet Options: Security 364
Figure 220 Security Settings - Java Scripting 365
Figure 221 Security Settings - Java 365
Figure 222 Java (Sun) 366

Figure 223 Network Number and Host ID 368
Figure 224 Subnetting Example: Before Subnetting 370
Figure 225 Subnetting Example: After Subnetting 371
Figure 226 IP Address Conflicts: Case A 375
Figure 227 IP Address Conflicts: Case B 376
Figure 228 IP Address Conflicts: Case C 376
Figure 229 IP Address Conflicts: Case D 377
Figure 230 Security Certificate 383
Figure 231 Login Screen 384
Figure 232 Certificate General Information before Import 384
Figure 233 Certificate Import Wizard 1 385
Figure 234 Certificate Import Wizard 2 385
Figure 235 Certificate Import Wizard 3 386
Figure 236 Root Certificate Store 386
Figure 237 Certificate General Information after Import 387
Figure 238 Device's Trusted CA Screen 388
Figure 239 CA Certificate Example 389
Figure 240 Personal Certificate Import Wizard 1 389
Figure 241 Personal Certificate Import Wizard 2 390
Figure 242 Personal Certificate Import Wizard 3 390
Figure 243 Personal Certificate Import Wizard 4 391
Figure 244 Personal Certificate Import Wizard 5 391
Figure 245 Personal Certificate Import Wizard 6 391
Figure 246 Access the Device Via HTTPS 392
Figure 247 SSL Client Authentication 392
Figure 248 Device Secure Login Screen 392

Table 1 Menu Bar Icon Description 36
Table 2 Title Bar Icon Description 37
Table 3 Device Window: Topology 38
Table 4 Device Window: Icons 38
Table 5 Device Window: Folder Icons 38
Table 6 Device Window: Device Icons 40
Table 7 Configuration Screen: Device List 42
Table 8 Navigation Panel: Menu Summary - Device Operation 46
Table 9 Navigation Panel: Menu Summary - Others 46
Table 10 Navigation Panel Links 47
Table 11 Device Operation > Device Configuration > General > System 55
Table 12 Device Operation > Device Configuration > General > Time Setting 56
Table 13 Device Operation > Device Configuration > LAN > LAN 60
Table 14 Device Operation > Device Configuration > Network > LAN > LAN (Prestige) 63
Table 15 Device Operation > Device Configuration > Network > LAN > Static DHCP 65
Table 16 Device Operation > Device Configuration > Network > LAN > IP Alias 66
Table 17 Device Operation > Device Configuration > Network > WAN > General (ZyNOS ZyWALL) .. 68
Table 18 Device Operation > Device Configuration > Network > WAN > ISP (Ethernet) – ZyNOS ZyWALL (one WAN port) 70
Table 19 Device Operation > Device Configuration > Network > WAN > ISP (PPPoE) – ZyNOS ZyWALL (one WAN port) 72
Table 20 Device Operation > Device Configuration > Network > WAN > ISP (PPTP) – ZyNOS ZyWALL (one WAN port) 75
Table 21 Device Operation > Device Configuration > Network > WAN > WAN1/2 (ZyNOS ZyWALL with two WAN ports) 78
Table 22 Device Operation > Device Configuration > Network > WAN > WAN1/2 - PPPoE (ZyNOS ZyWALL with two WAN ports) 81
Table 23 Device Operation > Device Configuration > Network > WAN > WAN1/2 - PPTP (ZyNOS ZyWALL with two WAN ports) 83
Table 24 Device Operation > Device Configuration > Network > WAN > Dial Backup (ZyNOS ZyWALL) 86
Table 25 Device Operation > Device Configuration > Network > WAN > Dial Backup > Advanced (ZyNOS ZyWALL) 88
Table 26 Device Operation > Device Configuration > Network > WAN > Dial Backup > Edit – ZyNOS ZyWALL 90
Table 27 Device Operation > Device Configuration > Network > WAN > Setup (Prestige) 92
Table 28 Device Operation > Device Configuration > Network > WAN > Backup (Prestige) 95
Table 29 Device Operation > Device Configuration > Network > WAN Backup > Advanced (Prestige) 97
Table 30 Device Operation > Device Configuration > Network > Wireless Card > Wireless Card 100
Table 31 Wireless Card: Static WEP 103
Table 32 Wireless Card: WPA-PSK 103
Table 33 Wireless Card: WPA 104
Table 34 Wireless Card: 802.1x + Dynamic WEP 104
Table 35 Wireless Card: 802.1x + Static WEP 105
Table 36 Wireless Card: 802.1x + No WEP 105

Table 37 Wireless Card: No Access 802.1x + Static WEP 106
Table 38 Wireless Card: No Access 802.1x + No WEP 106
Table 39 Device Operation > Device Configuration > Network > Wireless Card > MAC Filter 107
Table 40 Device Operation > Device Configuration > Security > Firewall > Default Rule 110
Table 41 Device Operation > Device Configuration > Security > Firewall > Rule Summary 112
Table 42 Device Operation > Device Configuration > Security > Firewall > Rule Summary > Add/Edit 115
Table 43 Device Operation > Device Configuration > Security > Firewall > Anti-Probing 117
Table 44 Device Operation > Device Configuration > Security > Firewall > Threshold 118
Table 45 Device Operation > Device Configuration > Security > Firewall > Service 119
Table 46 Device Operation > Device Configuration > Security > Firewall > Service > Add/Edit 120
Table 47 Device Operation > Device Configuration > Security > VPN > VPN Rules 122
Table 48 Device Operation > Device Configuration > Security > VPN > VPN Rules (IKE) > Gateway Policy Add/Edit 124
Table 49 Device Operation > Device Configuration > VPN > IKE IPSec 130
Table 50 Device Operation > Device Configuration > Security > VPN > VPN Rules (IKE) > Network Policy Move 134
Table 51 Configuration > VPN > Manual-Key IPSec 135
Table 52 Device Operation > Device Configuration > Security > VPN > VPN Rules (Manual) > Add/Edit 136
Table 53 Device Operation > Device Configuration > Security > VPN > Global Setting 139
Table 54 Device Operation > Device Configuration > Security > Anti-Virus > General 141
Table 55 Device Operation > Device Configuration > Security > Anti-Spam > General 143
Table 56 Device Operation > Device Configuration > Security > Anti-Spam > External DB 146
Table 57 Device Operation > Device Configuration > Security > Anti-Spam > Lists 147
Table 58 Device Operation > Device Configuration > Security > Anti-Spam > Lists > Add/Edit 149
Table 59 Device Operation > Device Configuration > Security > IDP > General 151
Table 60 Device Operation > Device Configuration > Security > IDP > Signature > Attack Types 153
Table 61 Device Operation > Device Configuration > Security > IDP > Signature > Intrusion Severity 154
Table 62 Device Operation > Device Configuration > Security > IDP > Signature > Actions 155
Table 63 Device Operation > Device Configuration > Security > IDP > Signature 156
Table 64 Device Operation > Device Configuration > Security > IDP > Signature (Query View) 157
Table 65 Device Operation > Device Configuration > Security > Signature Update 160
Table 66 Device Operation > Device Configuration > Security > Content Filter > General 162
Table 67 Device Operation > Device Configuration > Security > Content Filter > Policy 165
Table 68 Device Operation > Device Configuration > Security > Content Filter > Policy > Add/General .. 167
Table 69 Device Operation > Device Configuration > Security > Content Filter > Policy > External Database 168
Table 70 Device Operation > Device Configuration > Security > Content Filter > Policy > Customization 176
Table 71 Device Operation > Device Configuration > Security > Content Filter > Policy > Schedule . 178
Table 72 Device Operation > Device Configuration > Security > Content Filter > Object 180
Table 73 Device Operation > Device Configuration > Security > Content Filter > Cache 181
Table 74 Device Operation > Device Configuration > Security > X Auth > Local User 182

Table 75 Device Operation > Device Configuration > Security > X Auth > RADIUS 183
Table 76 Device Operation > Device Configuration > Advanced > NAT > NAT Overview 186
Table 77 Device Operation > Device Configuration > Advanced > NAT > Port Fowarding 188
Table 78 Device Operation > Device Configuration > Advanced > NAT > Address Mapping 189
Table 79 Device Operation > Device Configuration > Advanced > NAT > Address Mapping > Edit ... 190
Table 80 Device Operation > Device Configuration > Advanced > NAT > Trigger Port 191
Table 81 Device Operation > Device Configuration > Advanced > NAT > Trigger Port > Edit 193
Table 82 Device Operation > Device Configuration > Advanced > Static Route 194
Table 83 Device Operation > Device Configuration > Advanced > Static Route > Edit 195
Table 84 Device Operation > Device Configuration > Advanced > DNS > Address Record 196
Table 85 Device Operation > Device Configuration > Advanced > DNS > Address Record > Add/Edit 197
Table 86 Device Operation > Device Configuration > Advanced > DNS > Name Server Record 198
Table 87 Device Operation > Device Configuration > Advanced > DNS > Name Server Record > Add/Edit 199
Table 88 Device Operation > Device Configuration > Advanced > DNS > Cache 200
Table 89 Device Operation > Device Configuration > Advanced > DNS > DDNS 201
Table 90 Device Operation > Device Configuration > Advanced > DNS > DHCP 203
Table 91 Device Operation > Device Configuration > Advanced > Remote Management 205
Table 92 Device Operation > Device Configuration > Device Log > Log Settings 211
Table 93 Device Operation > Configuration Management > Synchronization 214
Table 94 Device Operation > Configuration Management > Configuration File > Backup & Restore (Device) 215
Table 95 Device Operation > Configuration Management > Configuration File Management > Backup & Restore > Backup (Device) 217
Table 96 Device Operation > Configuration Management > Configuration File Management > Backup & Restore (Folder) 218
Table 97 Device Operation > Configuration Management > Configuration File Management > Backup (Folder) 219
Table 98 Device Operation > Configuration Management > Configuration File Management > Restore (Folder) 221
Table 99 Device Operation > Configuration Management > Configuration File Management > Schedule List (Device) 221
Table 100 Device Operation > Configuration Management > Configuration File Management > Schedule List (Folder) 222
Table 101 Device Operation > Configuration Management > Configuration File Management > Schedule List (Folder) 224
Table 102 Device Operation > Configuration Management > Signature Profile Management > Backup & Restore 225
Table 103 Device Operation > Configuration Management > Signature Profile > Management (Device) . 226
Table 104 Device Operation > Configuration Management > Signature Profile Management > Backup & Restore > Restore (Folder) 227
Table 105 Device Operation > Configuration Management > Signature Profile Management > Reset to Factory 228
Table 106 Device Operation > Configuration Management > Building Block > Configuration BB 229

Table 107 Device Operation > Configuration Management > Building Block > Configuration BB > Add/Edit/Save as 230
Table 108 Device Operation > Configuration Management > Building Block > Component BB 232
Table 109 Device Operation > Configuration Management > Building Block > Component BB > Add/Edit/Save as 233
Table 110 Device Operation > Firmware Management > Firmware List 235
Table 111 Device Operation > Firmware Management > Scheduler List 237
Table 112 Device Operation > Firmware Management > Firmware Upgrade (Device) 239
Table 113 Device Operation > Firmware Management > Firmware Upgrade (Device) > Upgrade 240
Table 114 Device Operation > License Management > Service Activation > Registration 242
Table 115 Device Operation > License Management > Service Activation > Service 243
Table 116 Device Operation > License Management > License Status 244
Table 117 Device Operation > License Management > License Status > Activate/Upgrade 245
Table 118 Device Operation > License Management > Signature Status 246
Table 119 VPN Management > VPN Community 249
Table 120 VPN Management > VPN Community > Add/Edit 252
Table 121 VPN Management > Installation Report 255
Table 122 VPN Management > Installation Report 256
Table 123 VPN Management > VPN Monitor > By Community 257
Table 124 VPN Management > VPN Monitor > By Community > Show Detail 258
Table 125 VPN Management > VPN Monitor > By Community > Show Detail > Diagnostic > Logs 260
Table 126 VPN Management > VPN Monitor > By Device > VPN Tunnel Status 261
Table 127 VPN Management > VPN Monitor > By Device > VPN Tunnel Status > Search Special Tunnel 262
Table 128 VPN Management > VPN Monitor > By Device > SA Monitor 263
Table 129 Monitor > Device Status 267
Table 130 Monitor > Device HA Status 269
Table 131 Types of Alarms 271
Table 132 Alarm Severity 271
Table 133 Alarm States 272
Table 134 Monitor > Device Alarm > Unresolved Alarm 273
Table 135 Monitor > Device Alarm > Responded Alarm 274
Table 136 Log & Report > Operation Report > Firmware Upgrade Report 280
Table 137 Log & Report > Operation Report > Firmware Upgrade Report (Group) > Show Detail 281
Table 138 Log & Report > Operation Report > Configuration Report 282
Table 139 Log & Report > Operation Report > Configuration Report > Show Details 283
Table 140 Log & Report > Operation Report > Configuration File Backup & Restore Report > Backup Report 285
Table 141 Log & Report > Operation Report > Configuration File Backup & Restore Report > Backup Report (Group) > Show Detail 286
Table 142 Log & Report > Operation Report > Configuration File Backup & Restore Report > Backup Report 287
Table 143 Log & Report > Operation Report > Signature Profile Backup & Restore Report > Backup Report 288

Table 144 Log & Report > Operation Report > Signature Profile Backup & Restore Report > Restore Report 289
Table 145 LOG & Report > CNM Logs 292
Table 146 CNM System Setting > Configuration > Servers > Configuration 300
Table 147 CNM System Setting > Configuration > Servers > Status 302
Table 148 CNM System Setting > Configuration > User Access 303
Table 149 CNM System Setting > Configuration > Notification 304
Table 150 CNM System Setting > Configuration > VRPT Management 306
Table 151 CNM System Setting > Configuration > VRPT Management > Add/Edit 307
Table 152 CNM System Setting > Configuration > Certificate Management 309
Table 153 Cnm system Setting > Configuration > Certificate Management > Create CSR 310
Table 154 CNM System Setting > Configuration > Certificate Management > Import Certificate 311
Table 155 CNM System Setting > Maintenance > System 313
Table 156 CNM System Setting > Maintenance > System > Backup 314
Table 157 CNM System Setting > Device Owner 315
Table 158 CNM System setting > Device Owner > Add/Edit 316
Table 159 CNM System Setting > License 319
Table 160 Account Management > Group 326
Table 161 Account Management > Group > Add 327
Table 162 Account Management > Account 330
Table 163 Account Management > Account > Add/Edit 331
Table 164 Firmware Specifications 341
Table 165 Feature Specifications 342
Table 166 ZyXEL Device and the Corresponding Firmware Version Vantage CNM Supports 342
Table 167 Trusted CAs (Keystore type: jks, Keystore provider: SUN) 342
Table 168 Port Number Specifications 344
Table 169 System Notifications Specifications 344
Table 170 Feature Specifications 344
Table 171 Default Access 344
Table 172 IP Address Network Number and Host ID Example 368
Table 173 Subnet Masks 369
Table 174 Maximum Host Numbers 369
Table 175 Alternative Subnet Mask Notation 369
Table 176 Subnet 1 371
Table 177 Subnet 2 372
Table 178 Subnet 3 372
Table 179 Subnet 4 372
Table 180 Eight Subnets 372
Table 181 24-bit Network Number Subnet Planning 373
Table 182 16-bit Network Number Subnet Planning 373
Table 183 Commonly Used Services 379

1

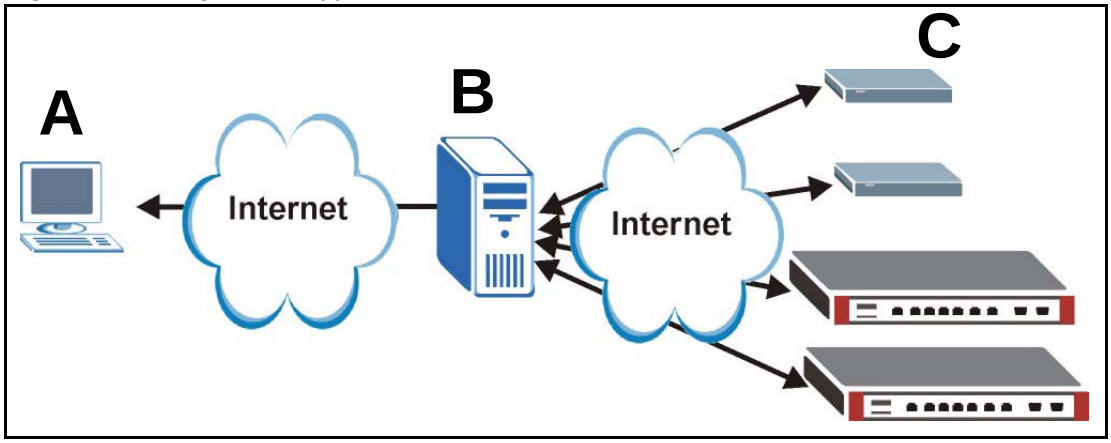
Introducing Vantage CNM

This chapter introduces the main applications and features of Vantage CNM. It also introduces the ways you can manage Vantage CNM.

1.1 Overview

Vantage Centralized Network Management (“Vantage CNM”) helps network administrators monitor and manage a distributed network of ZyXEL network devices. A typical application is shown in the following example.

Figure 1 Vantage CNM Application



In this example, you use the Vantage CNM web configurator (**A**) to access the Vantage CNM server (**B**). The Vantage CNM server is connected to the devices (**C**), and you can

- Monitor all the devices in the network and receive alarms in one place
- Create building blocks to configure one or more devices
- Set up other administrators who are allowed to perform specific functions for specific devices

You can also manage configuration files, upload firmware, and activate subscription services, such as Intrusion Detection and Protection (IDP) and content filtering, on one or more devices. See Appendix A on page 341 for a complete list of features and supported devices.

1.2 Ways to Manage Vantage CNM

Use the web configurator to access and manage Vantage CNM. See the Quick Start Guide for instructions to access the web configurator and this User's Guide for more information about the screens.

1.3 Suggestions for Using Vantage CNM

Do the following things regularly to make Vantage CNM more secure and to manage Vantage CNM more effectively.

- Change the **root** password. Use a password that's not easy to guess and that consists of different types of characters, such as numbers and letters.
- Write down the **root** password and put it in a safe place. If you forget the **root** password, contact your local vendor.
- Back up the configuration (and make sure you know how to restore it). Restoring an earlier working configuration may be useful or necessary if the system becomes unstable or even crashes. If you have to re-install Vantage CNM, you could simply restore your last configuration afterwards.

PART I
Introduction

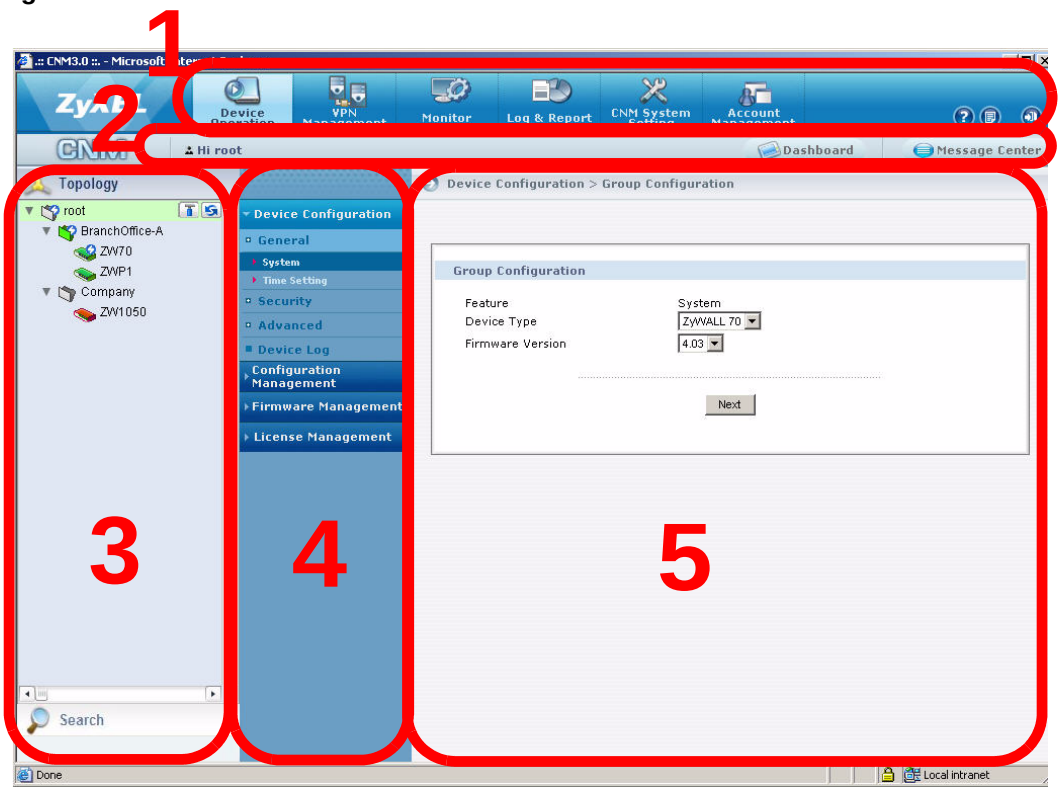
Introducing Vantage CNM (31)
GUI Introduction (35)

2

GUI Introduction

See the Quick Start Guide for instructions about installing, setting up, and accessing Vantage CNM. This chapter introduces the Vantage CNM main screen.

Figure 2 Main Screen



The main screen consists of three main parts and are numbered in the sequence you typically follow to configure a device.

1. **Menu bar**: Displays main menu links that you use to access related submenus in the navigation panel (4) or to manage the Vantage CNM
2. **Title bar**: Displays login user name, dashboard and message center buttons.
3. **Device window**: Displays the devices that are managed by the Vantage CNM. You can also configure and view the logical groupings of the managed devices. This is also known as OTV (Object Tree View).
4. **Navigation panel**: Displays the navigation links that you use to access configuration, log or status screens.
5. **Configuration window**: Displays the configuration screens that you set for Vantage CNM or a selected device.

For security reasons, Vantage CNM automatically times out after fifteen minutes of inactivity. Log in again if this happens.

Each part is discussed in more detail in the following sections.

2.1 Menu Bar

The following table describes the icons in the menu bar.

Table 1 Menu Bar Icon Description

ICON	DESCRIPTION
	Click this icon to display the navigation links to screens that allow you to configure, manage firmware or license for a selected device.
	Click this icon to display the navigation links to screens that allow you to manage VPN tunnels among ZyWALL devices and provide diagnostics for fail tunnels.
	Click this icon to display the navigation links to screens that allow you to check device status, ZLD ZyWALL Device HA status and device alarm.
	Click this icon to display the navigation links to screens that allow you to view device operation reports, CNM logs and device associated Vanatage reports on Vantage Report server.
	Click this icon to display the navigation links to screens that allow you to configure/ backup/restore the Vantage CNM system settings, upgrade Vantage CNM software version and license and view the current software informatoin.
	Click this icon to display the navigation links to screens that allow you to manage system group and account.
	Click this icon to open the help page for the current screen in Vantage CNM.
	Click this icon to open a screen that displays the version of Vantage CNM.
	Click this icon to log out of Vantage CNM.

When you click a menu icon, an introduction for the menu and its corresponding navigation panel menus appear in the configuration window. See Table 8 on page 46.

2.2 Title Bar

The following table describes the icons in the title bar.

Table 2 Title Bar Icon Description

ICON	DESCRIPTION
	This icon displays with a hi to the current login user.
	Click this icon to display the dashboard in the configuration window.
	Click this icon to open a window to display real-time Vantage CNM system logs.

2.3 Device Window

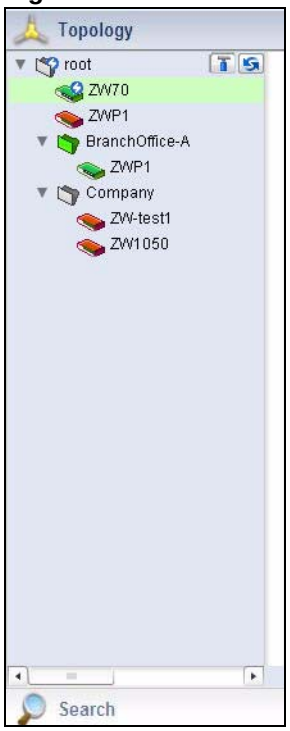
Use the device window to view the logical network topology, search for a device, view general device status or select which device(s) you want to edit configuration settings.

2.3.1 Topology

You can view the logical network topology in the **Topology** screen in the device window. You can also create, delete or rename a device or a folder in the **Topology** screen.

In the **Topology** screen, you can only view the folder(s) or device(s) for your login account group. You cannot view the folders created by another user group.

Figure 3 Device Window: Topology



The following table describes the labels in the Device window.

Table 3 Device Window: Topology

LABEL	DESCRIPTION
Topology	Click **Topology** to display device groups in a tree structure.
Search	Click **Search** to look for device(s).

There are a couple icons in the device window that perform additional functions related to views.

Table 4 Device Window: Icons

Icon	Description
	Click this icon to set how often the OTV tree refreshes.
	Click this icon to refresh the OTV tree.

2.3.1.1 Folders

Folders are represented by the following icons in the device window.

Table 5 Device Window: Folder Icons

Icon	Status	Description
	On-Closed	This is a closed folder, which contains online devices.
	On-Open	This is a opened folder, which contains online devices.
	Off-Closed	This is a closed folder, which contains one or some offline devices.
	Off-Open	This is a opened folder, which contains one or some offline devices.
	On_Alarm-Closed	This is a closed folder, which contains some online devices with an alarm.
	On_Alarm-Open	This is a opened folder, which contains some online devices with an alarm.
	Off_Alarm-Closed	This is a closed folder, which contains one or some offline devices. Some are with an alarm.
	Off_Alarm-Open	This is a opened folder, which contains one or some offline devices. Some devices are with an alarm.
	On_Pending-Closed	This is a closed folder, which contains some online devices with pending tasks.
	On_Pending-Open	This is a opened folder, which contains some online devices with pending tasks.
	Off_Pending-Closed	This is a closed folder, which contains one or some offline devices. Some devices are with pending tasks.
	Off_Pending-Open	This is a opened folder, which contains one or some offline devices. Some devices are with pending tasks.
	On_Alarm_Pending-Closed	This is a closed folder, which contains some online devices with an alarm and some with pending tasks.
	On_Alarm_Pending-Open	This is a opened folder, which contains some online devices with an alarm and some with pending tasks.

Table 5 Device Window: Folder Icons (continued)

Icon	Status	Description
	Off_ Alarm_Pending-Closed	This is a closed folder, which contains one or some offline devices. Some devices with an alarm while some with pending tasks.
	Off_ Alarm_Pending-Open	This is a opened folder, which contains one or some offline devices. Some devices with an alarm while some with pending tasks.

You can right-click on a folder to see the following menu items. Some folders do not have every menu item. Click **Settings** to configure the Adobe flash player settings. Click **About Adobe Flash Player 9** to connect to Adobe's website for more information.

Figure 4 Folder Right-Click Options

2.3.1.1.1 Add a Folder

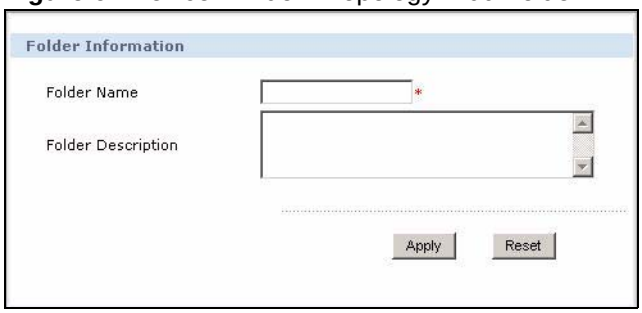
Topology folders allow you to group managed devices logically. You can add or delete device(s) in a folder. The following steps show you how to create a device group folder in the **Topology** screen.

1. In the device window, click **Topology**.
2. Right-click on a folder and click **Add Folder**.

Figure 5 Device Window: Topology: Right Click to Add a Folder

3. The screen displays in the configuration window as shown. Enter a descriptive name (Specify a unique, up to 64 alphanumerical characters including 0-9, a-z, A-Z, _, -) in the **Folder Name** field) and/or a description for the folder. Click **Apply**.

Figure 6 Device Window: Topology: Add Folder



4 A new folder icon displays.

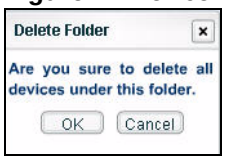
2.3.1.1.2 Delete a Folder

Deleting a folder also deletes all the associated device(s).

Follow the steps below to delete a group.

1 In the device window, click **Topology**.
2 Right-click on a folder and click **Delete Folder**.
3 A warning screen displays.
Click **OK** to delete.
Click **Cancel** to close this screen without deleting the selected folder.

Figure 7 Device Window: Topology: Delete Folder Warning

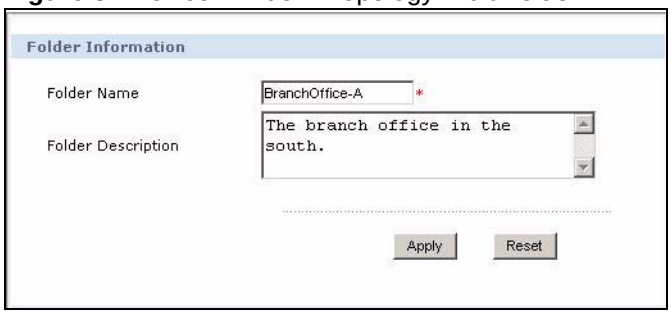


2.3.1.1.3 Edit a Folder

When you edit a folder, you can rename the folder or modify its description..

1 In the device window, click **Topology**.
2 Right-click on the folder you want to edit and click **Edit Folder**.
3 The screen displays in the configuration window as shown. Rename it and/or modify its description and click **Apply**.

Figure 8 Device Window: Topology: Edit Folder



2.3.1.2 Devices

A device appears in the device window if it is registered (Section 3.3 on page 58) and mapped to a folder (Section 2.3.1.2.3 on page 44) in the Vantage CNM.

Devices are represented by the following icons in the device window.

Table 6 Device Window: Device Icons

Icon		Description
	On	This is a device turned on.
	Off	This is a device turned off.

Table 6 Device Window: Device Icons (continued)

Icon		Description
	Not Yet Acquired	This is a device never registered itself to Vantage CNM since it is added in the device window.
	On_Alarm	This is a device turned on with an alarm.
	Off_Alarm	This is a device turned off with an alarm.
	On_Pending	This is a device turned on with pending tasks.
	Off_Pending	This is a device turned off with pending tasks.
	On_Alarm_Pending	This is a device turned on with an alarm and pending tasks.
	Off_Alarm_Pending	This is a device turned off with an alarm and pending tasks.

You can right-click on a device to see the following menu. Some menu items are not available for every device. Click **Settings** to configure Adobe flash player settings. Click **About Adobe Flash Player 9** to connect to Adobe's website for more information.

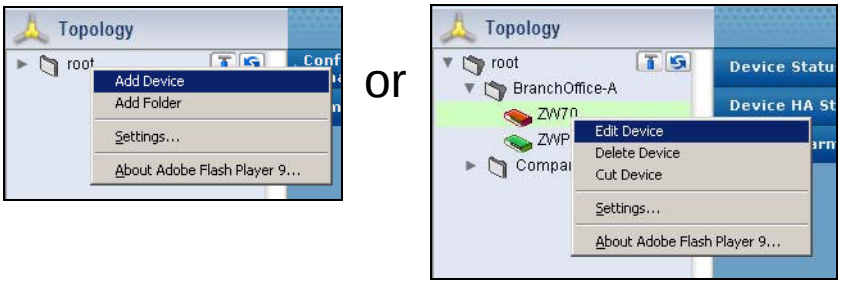
Figure 9 Device Right-Click Options

2.3.1.2.1 Add/Edit a Device

The following steps show you how to create a device in the **Topology** screen.

1. In the device window, click **Topology.**
2. Right-click on a folder and click **Add Device** or right-click on a device and click **Edit Device**.

Figure 10 Device Window: Topology: Right Click to Add/Edit a Device



3. The screen displays in the configuration window as shown.

Figure 11 Device Window: Topology: Add/Edit Device (ZyNOS)

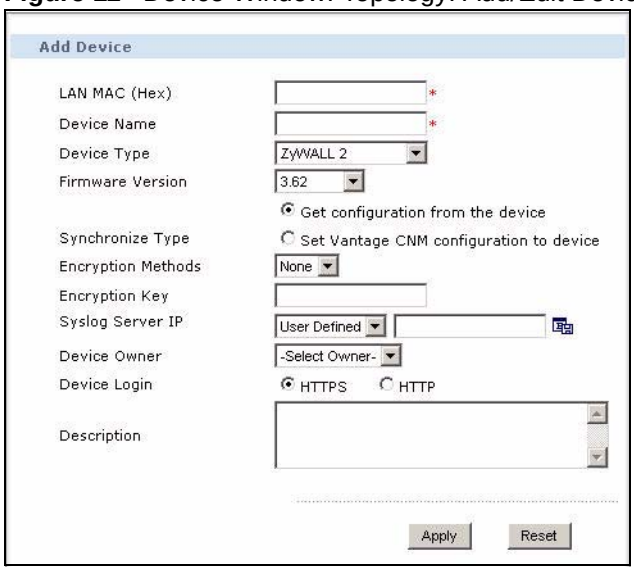
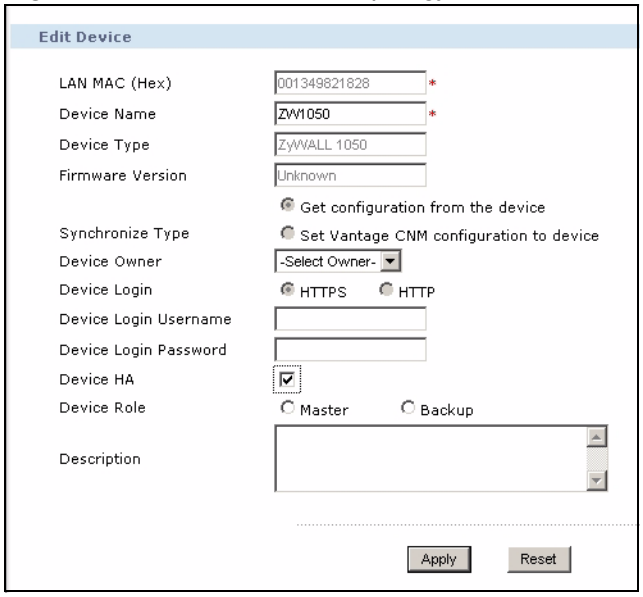


Figure 12 Device Window: Topology: Add/Edit Device (ZLD)



The following table describes the labels in this screen.

Table 7 Configuration Screen: Device List

LABEL	DESCRIPTION
LAN MAC (Hex)	Enter the LAN MAC address of the device (without colons) in this field. Vantage CNM uses the MAC address to identify the device, so make sure it is entered correctly.
Device Name	Enter a unique name here for the device for identification purposes. The device name cannot exceed ten characters.
Device Type	Select the device type from the pull-down menu. The pull-down menu lists only full functions supported device types (See table xxx). Select **Unknown** if you cannot find your device model from the list.

Table 7 Configuration Screen: Device List (continued)

LABEL	DESCRIPTION
Firmware Version	This field is only available for a ZyNOS device. Select the firmware version the device is currently using. The pull-down menu lists only supported firmware versions. Select **Unknown** if you don't know the device's firmware version or you cannot find your device's current firmware version from the list. Note: Not all ZyXEL devices can work with Vantage CNM. See Quick Start Guide for the supported device models and firmware versions.
Synchronize Type	Select **Get configuration from the device** if you want Vantage CNM to pull all current device configurations into Vantage CNM. The current device configuration "overwrites" Vantage CNM configurations. Select **Set Vantage CNM configuration to device** if you want Vantage CNM to push all current configurations from Vantage CNM to the device. The current device configuration is then reset to the configuration settings in Vantage CNM.
Encryption Methods	This field is only available for a ZyNOS device. The encryption options are DES and 3DES. Choose from **None** (no encryption), **DES** or **3DES**. The device must be set to the same encryption mode (and have the same encryption key) as the Vantage CNM server.
Encryption Key	This field is only available for a ZyNOS device. Type an eight-character alphanumeric ("0" to "9", "a" to "z" or "A" to "Z") for DES encryption and a 24-character alphanumeric ("0" to "9", "a" to "z" or "A" to "Z") for 3DES encryption.
Syslog Server IP	Select the IP address of the device's Vantage Report server, or, if the IP address is not in the drop-down box, select **User-Define** and enter the IP address. Leave the IP address blank if the device does not use a Vantage Report server. See Section 21.6 on page 306.
Device Owner	Select the owner's name of the device. You have to go to **CNM System Setting** > **Device Owner** screen to add device owners first.
Device Login	Select **HTTPS** to use HTTPS connection when login the device's web configurator from Vantage CNM. Select **HTTP** to use HTTP connection when login the device's web configurator from Vantage CNM.
Device Login Username	This field is only available for a ZLD device. Type the administrator's login name of the device in this field.
Device Login Password	This field is only available for a ZLD device. Type the administrator's login password of the device in this field.
Device HA	This field is only available for a ZLD device. Select this if you want to monitor the device's device HA status from the Vantage CNM. After you select this, the **Device Role** field appears.
Device Role	Select **Master** or **Backup** for this device's HA role. Note: You have to select the correct role matching to the setting on the device. Otherwise, you cannot see the related information shown in the **Monitor** > **Device HA status** on the Vantage CNM. Note: You have to add a master device before adding the backup device in the same HA group.
Description	Enter a description for the ZyXEL device.
Apply	Click this to save your changes back to the OTV tree.
Reset	Click this to begin configuring this screen afresh.

4 After clicking **Apply** and a new device icon displays.

2.3.1.2.2 Delete a Device

Follow the steps below to delete a group.

1 In the device window, click **Topology**.
2 Right-click on a device and click **Delete Device**.
3 A warning screen displays.
Click **OK** to delete.
Click **Cancel** to close this screen without deleting the selected device.

Figure 13 Device Window: Topology: Delete Device Warning

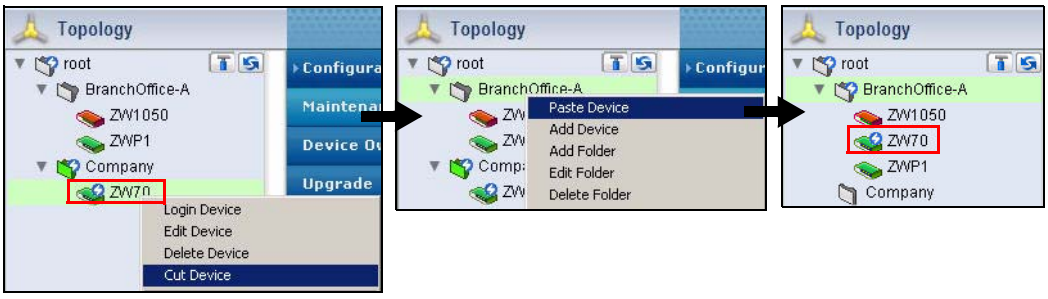
2.3.1.2.3 Associate a Device to Another Folder

To un-associate a device from a folder, log into the web configurator as root or a user who belongs to the "super" group.

1 In the device window, click **Topology**.
2 Right-click on a device and click **Cut Device**.
3 Right-click on a folder you want to move the device to and click **Paste Device**.
4 The device re-associates to another folder.

The following figure shows you an example to move a device from one folder to another.

Figure 14 Device Window: Topology: Re-associate a Device



2.3.1.2.4 Login a Device

You can log into a device's web configurator from Vantage CNM web configuration directly.

1 In the device window, click **Topology**.
2 Right-click on an on-line device you want to access to and click **Login Device**.

Figure 15 Device Window: Topology: Delete Device Warning

3 The device's web configurator appears via a HTTP or HTTPS connection. You can change the device login setting by editing a device. Refer to Figure 11 on page 42.

2.3.2 Device Search

Use the **Search** function in the device window to look for device(s).

1 In the device window, click **Search**.

Figure 16 Device Window: Search

2 Specify the search criteria (such as the device type, device status, etc.) and click **Search**.

3 Vantage CNM displays the device(s) that match any of the search criteria.

2.4 Navigation Panel and Configuration Window

Use this panel to navigate to and display the screens. These screens are organized into different menus. You can only expand the submenus from a menu at one time. If you expand another one, the previous one automatically contracts.

Menus available in the navigation panel vary depending your login account type, whether you have selected a device or device group and the device model you manage. Following are the menus you can see under the **Device Operation** menu for different device models.

Menus vary depending on the device model you select. See device's User's Guide for the detail configuration description.

Table 8 Navigation Panel: Menu Summary - Device Operation

DEVICE OPERATION		
ZYNOS-BASED DEVICE	**ZLD-BASED DEVICE**	**PRESTIGE**
Device Configuration Load or Save BB General System Tim Setting Network LAN WAN DMZ WLAN Wireless Card Port Roles Security Firewall VPN Anti-Virus Anti-Spam IDP Signature Update Content Filter X Auth Advanced NAT Static Route DNS Remote Management Device Log Configuration Management Synchronization Configuration File Management Signature Profile Management Building Block Firmware Management Firewall List Schedule List Firmware Upgrade License Management Service Activation License Status Signature Status	Device Configuration Network Interface Routing VPN IPSec VPN SSL VPN L2TP VPN Object User/Group Address Service Schedule AAA Server Auth.method Certificate ISP Account SSL Application Management Log Setting Configuration Management Synchronization Configuration File Management Signature Profile Management Building Block Firmware Management Firewall List Schedule List Firmware Upgrade License Management Service Activation License Status Signature Status	Device Configuration Load or Save BB General System Tim Setting Network LAN WAN DMZ Wireless Card Security Firewall VPN X Auth Advanced NAT DDNS Device Log ADSL Monitor Configuration Management Configuration File Management Building Block Firmware Management Firewall List Schedule List Firmware Upgrade License Management

Following are the other menus.

Table 9 Navigation Panel: Menu Summary - Others

VPN MANAGEMENT	MONITOR	LOG & REPORT
VPN Community Installation Report VPN Monitor By Community By Device	Device Status Device HA Status Device Alarm Unresolved Alarm Responded Alarm	Operation Report Firmware Upgrade Report Configuration Report Configuration File Backup & Restore Report Signature Profile Backup & Restore Report CNM Logs VRPT

Table 9 Navigation Panel: Menu Summary - Others

CNM SYSTEM SETTING	ACCOUNT MANAGEMENT	
Servers User Access Notification Log Setting VRPT Management Certificate Management Maintenance Device Owner Upgrade License About	Group Account	

The following table describes the links in the navigation panel.

Table 10 Navigation Panel Links

LINK	DESCRIPTION
Device Operation	
Device Configuration	This link takes you to a screen where you can configure general device information.
Configuration Management	This link takes you to a screen where you can configure synchronization setting between Vantage CNM and devices, backup/restore device configuration file, backup/restore anti-virus or IDP signature profiles, or manage building blocks.
Firmware Management	This link takes you to a screen where you can manage device firmware files, upgrade firmware for a on-line device or set a device firmware upgrade schedule.
License Management	This link takes you to a screen where you can register a user account and activate UTM services to myZyXEL.com for the selected device. You also can manage UTM services license and monitor signature status for the device.
VPN Management	
VPN Community	This link takes you to a screen where you can centrally manage (add/edit/delete) VPN settings between or among managed devices.
Installation Report	This link takes you to a screen where you can check whether the settings of a configured VPN community are successfully applied to associated devices.
VPN Monitor	This link takes you to a screen where you can monitor status of tunnels.
Monitor	
Device Status	This link takes you to a screen where you can monitor device general information (ex. firmware version, WAN IP address, LAN MAC address, and so on) and current status.
Device HA Status	This link takes you to a screen where you can monitor device high availability (HA) status for ZLD devices (ex. ZyWALL1050 or ZyWALL USG 300).
Device Alarm	This link takes you to a screen where you can monitor device alarms.
Log & Report	
Operation Report	This link takes you to a screen where you can see firmware upgrade, device cofniguration, configuration backup/restore, and signature profile backup/restore reports.
CNM Logs	This link takes you to a screen where you can see all or specified CNM logs via a query.

Table 10 Navigation Panel Links (continued)

LINK	DESCRIPTION
VRPT	This function is available if any Vantage Report (VRPT) server is configured on the selected device. This link takes you to a screen where you can see reports generated by an associated VRPT server.
CNM System Setting	
Configuration	This link takes you to a screen where you can configure Vantage CNM settings.
Maintenance	This link takes you to a screen where you can backup/restore Vantage CNM settings and device list.
Device Owner	This link takes you to a screen where you can manage device owners.
Upgrade	This link takes you to a screen where you can see current Vantage CNM software version and perform a software upgrade.
License	This link takes you to a screen where you can activate or upgrade a Vantage CNM license.
About	This link takes you to a screen where you can see Vantage CNM software version, release date, and copyright.
Account Management	
Group	This link takes you to a screen where you can define group privilege and manage (add/edit/remove) groups.
Account	This link takes you to a screen where you can manage (add/edit/kick out/remove) user accounts.

This section provides some notes about the navigation panel.

- The configuration information appears when you click a menu item from nevigation panel for a selected device, folder or for Vantage CNM management.
- Menus display may vary depending on which device model you are configuring.
- If the login user does not have permission to use a menu item, it is not displayed.
- The operation on Vantage CNM is:

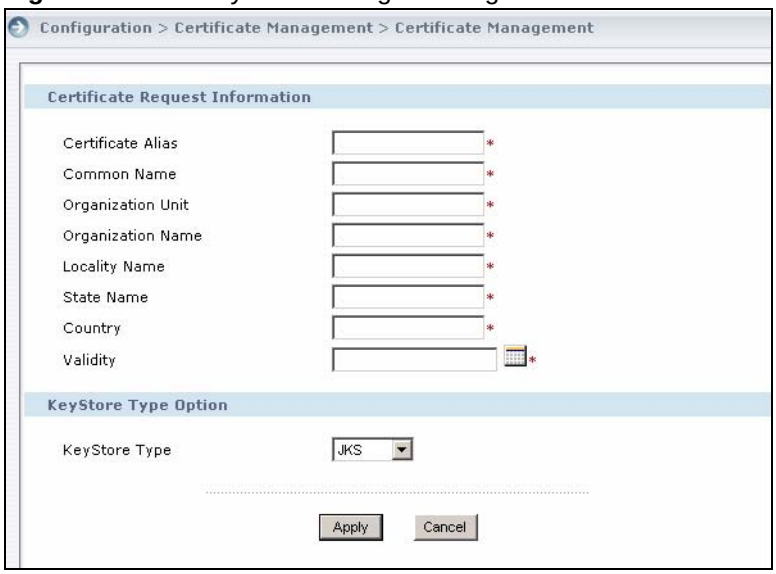
If you select **Device Operation**, **Log & Report (all except sub-menu VRPT)** or **Monitor** in the menu bar,	
1	click a device or a folder,
2	click a sub-menu in the navigation panel,
3	the corresponding information displays in the configuration window.
If you select **VPN Management**, **Log & Report (sub-menu VRPT**), **CNM System Setting** or **Account Management** in the menu bar,	
1	click a sub-menu in the navigation panel,
2	the corresponding information displays in the configuration window.

2.5 Security Risk Pop-up Messages in Internet Explorer 7.0

The default certificate in Vantage CNM is self-signed, not signed by a trusted CA. As a result, Internet Explorer 7.0 might give you a pop-up message about the security risk. Follow these steps to get rid of this pop-up message.

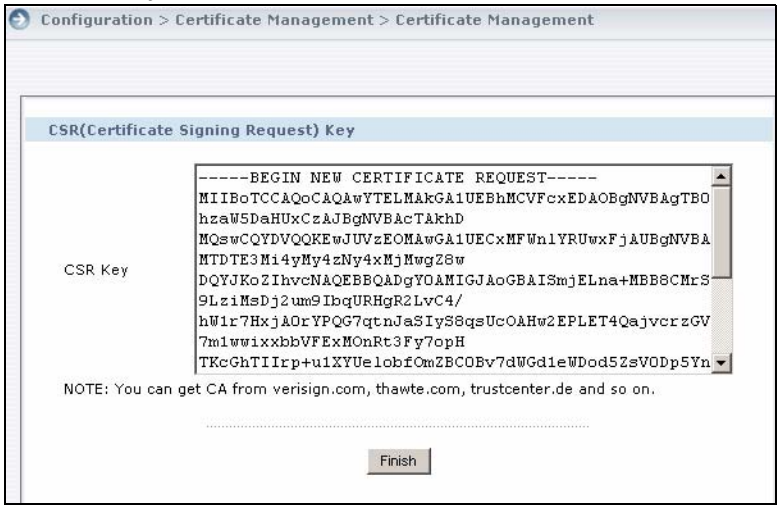
1. Click **CNM System Setting** in the menu bar.
2. Click **Configuration** > **Certificate Management** in the navigation panel.
3. Click **Create CSR**. The following screen appears.

Figure 17 CNM System Setting > Configuration > Certificate Management > Create CSR



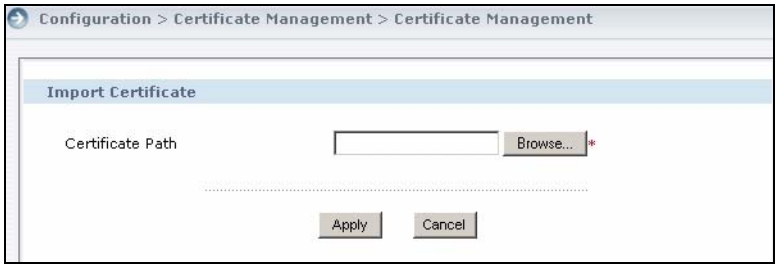
4. Type the IP address of the Vantage CNM server in the **Common Name** field. This is the IP address you use to log in (http://your IP address:8080/vantage). The value **localhost** cannot be used in the **Common Name** field.
5. Enter the rest of the required information, and click **Apply**. See Section 21.7 on page 308 for more information about these fields.
6. A CSR (Certificate Signing Request) key screen displays. Copy this CSR key and click **Finish**. Use this CSR key to get a signed certificate from a trusted CA (certification authority).

Figure 18 CNM System Setting > Configuration > Certificate Management > Create CSR > CSR Key



7. The **Certificate Management** screen appears. Click **Import Certificate**. The following screen appears.

Figure 19 CNM System Setting > Configuration > Certificate Management > Import Certificate



8 Enter the signed certificate file path and click **Apply**.

9 Restart the Vantage CNM server.

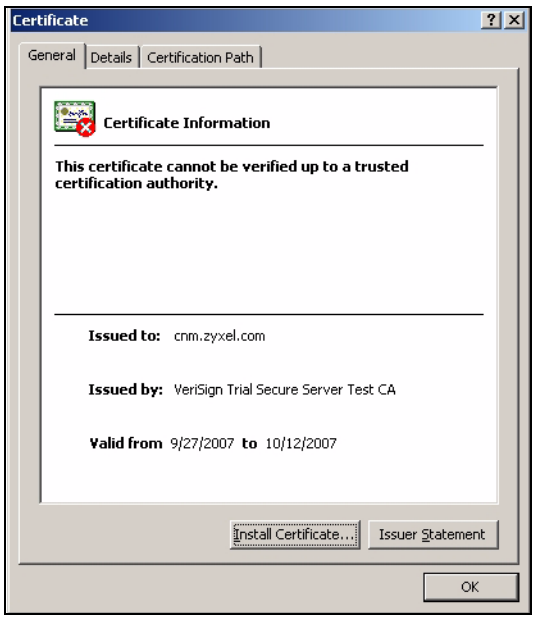
10 Use the IP address and log into the Vantage CNM server.

11 In Internet Explorer 7.0, click **View Certificates** when the following screen appears.

Figure 20 Pop-up Message in Internet Explorer 7.0

Security Alert
Information you exchange with this site cannot be viewed or changed by others. However, there is a problem with the site's security certificate.
The security certificate was issued by a company you have not chosen to trust. View the certificate to determine whether you want to trust the certifying authority.
The security certificate date is valid.
The name on the security certificate is invalid or does not match the name of the site
Do you want to proceed?
Yes
No
View Certificate

12 **Certificate** screen appears. Click **Install Certificate** and follow instruction to install the new certificate.



PART II
Device Operation

This menu only appear if you select a device. For ZLD-based device, this menu appear when the device status is on.

The menus and screens may vary depending on the device model you select. See Table 8 on page 46 for the device model and the corresponding firmware version CNM supports.

Load or Save Building Blocks (BB) (53)
Device General Settings (55)
Device Network Settings (59)
Device Security Settings (109)
Device Advanced Settings (185)
Device Log (209)
Device Configuration Management (213)
Firmware Management (235)
License Management (241)

3

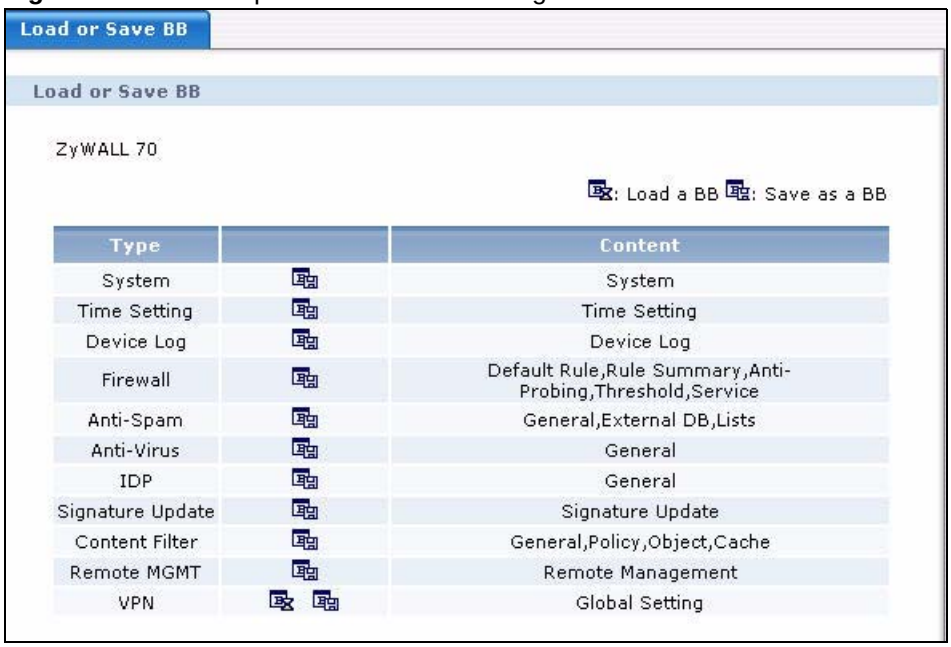
Load or Save Building Blocks (BB)

These menus only appear if you select a ZyNOS-based or a prestige device.

3.1 Load or Save BB

Use this menu item to load building blocks to the selected device or to create building blocks from the current configuration of the selected device. This menu item appears if a device is selected. See Chapter 34 on page 356 for more information about building blocks. To open this menu item, select the device, click **Device Operation** in the menu bar and then click **Device Configuration** > **Load or Save BB** in the navigation panel.

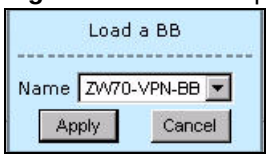
Figure 21 Device Operation > Device Configuration > Load or Save BB



This screen displays the type of the selected device, each type of building block, and a summary of the information in each type of building block.

Click the **Load a BB** icon to load a building block to the selected device. The following pop-up screen appears.

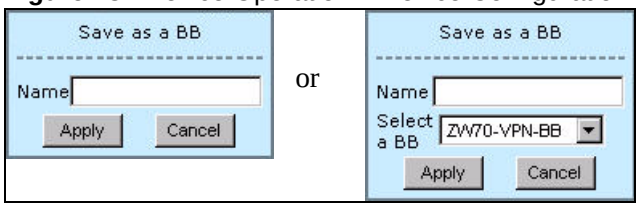
Figure 22 Device Operation > Device Configuration > Load or Save BB > Load a BB



Select the building block you want to load to the selected device, and click **Apply**.

Click the **Save as a BB** icon to save the current configuration of the selected device as a building block. The following pop-up screen appears.

Figure 23 Device Operation > Device Configuration > Load or Save BB > Save as a BB



Enter the name of the new building block, and click **Apply**. The name must be 1-32 alphanumeric characters or underscores (_). It cannot include spaces. The name is case-sensitive. If you have an existing BB, the **Select a BB** field appears. You can replace an existing BB with the current configuration by selecting it from the **Select a BB** field and click **Apply**.

4

Device General Settings

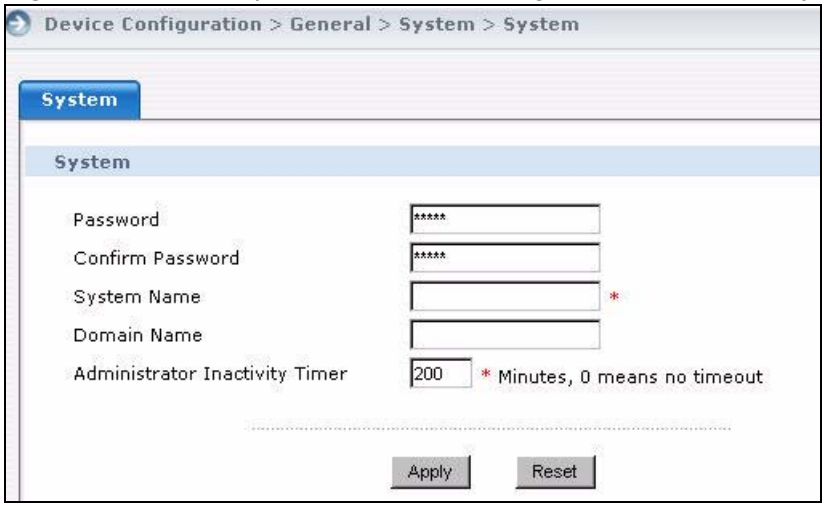
This section configures device general settings.

These menus only appear if you select a ZyNOS-based or a prestige device. For ZLD-based device, these menus appear when the device status is on.

4.0.1 System

Use this screen to set the password, system name, domain name, idle timeout, and DNS servers for the device. Please see the device's User's Guide for more information about any of these screens or fields. To open this screen, click **Device Operation** in the menu bar, and click **Device Configuration** > **General** > **System** in the navigation panel.

Figure 24 Device Operation > Device Configuration > General > System



The following table describes the fields in this screen.

Table 11 Device Operation > Device Configuration > General > System

FIELD	DESCRIPTION
Password	Enter the password used to access the device.
Confirm Password	Re-enter the password used to access the device.
System Name	Enter a unique name here for the device for identification purposes. The device name cannot exceed 31 characters.

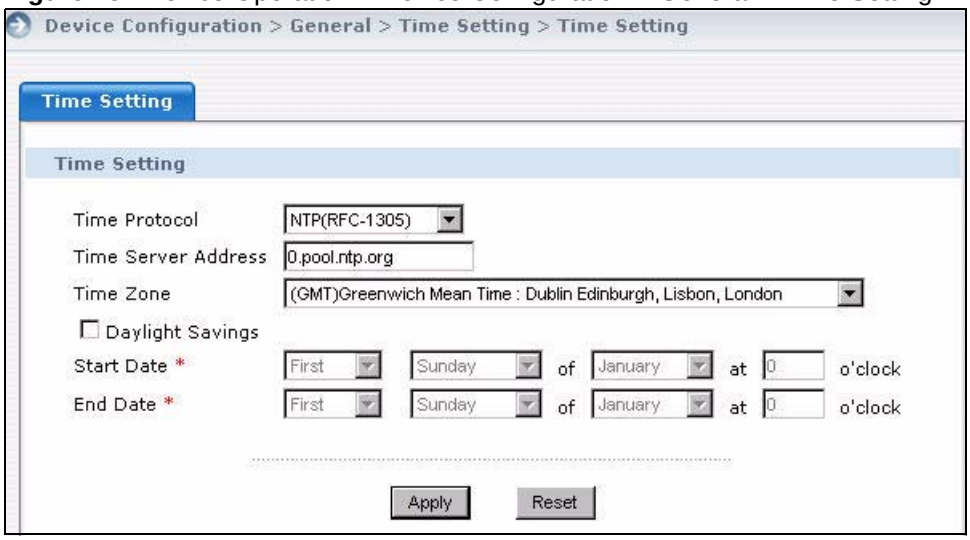
Table 11 Device Operation > Device Configuration > General > System (continued)

FIELD	DESCRIPTION
Domain Name	The Domain Name entry is what is propagated to the DHCP clients on the LAN side of the target device. If you leave this blank, the domain name obtained by the device via DHCP from the ISP is used.
Administrator Inactivity Timer	Set how long a management session can remain idle before it expires. After it expires, you have to log back into the device.
Apply	Click this to save your changes to the device.
Reset	Click this to begin configuring the screen afresh.

4.0.2 Time Setting

Use this screen to configure the time settings on the device. To open this screen, click **Device Operation** > **Device Configuration** > **General** > **Time Setting**.

Figure 25 Device Operation > Device Configuration > General > Time Setting



The following table describes the fields in this screen.

Table 12 Device Operation > Device Configuration > General > Time Setting

LABEL	DESCRIPTION
Time Protocol	Select the time service protocol that your timeserver sends when you turn on the device. Not all time servers support all protocols, so you may have to check with your ISP/network administrator or use trial and error to find a protocol that works. The main difference between them is the format. **Daytime (RFC-867)** format is day/month/year/time zone of the server. **Time (RFC-868)** format displays a 4-byte integer giving the total number of seconds since 1970/1/1 at 0:0:0. The default, **NTP (RFC-1305),** is similar to Time (RFC 868). Select **None** to enter the time and date manually.
Time Server Address	Enter the IP address or domain name of your timeserver. Check with your ISP/ network administrator if you are unsure of this information (the default is tick.stdtime.gov.tw).
Time Zone	Choose the Time Zone of your location. This will set the time difference between your time zone and Greenwich Mean Time (GMT).

Table 12 Device Operation > Device Configuration > General > Time Setting (continued)

LABEL	DESCRIPTION
Daylight Savings	Daylight saving is a period from late spring to early fall when many countries set their clocks ahead of normal local time by one hour to give more daytime light in the evening. Select this option if you use Daylight Saving Time.
Start Date	Configure the day and time when Daylight Saving Time starts if you selected **Daylight Savings**. The **o'clock** field uses the 24 hour format. Here are a couple of examples: Daylight Saving Time starts in most parts of the United States on the first Sunday of April. Each time zone in the United States starts using Daylight Saving Time at 2 A.M. local time. So in the United States you would select **First**, **Sunday**, **April** and type 2 in the **o'clock** field. Daylight Saving Time starts in the European Union on the last Sunday of March. All of the time zones in the European Union start using Daylight Saving Time at the same moment (1 A.M. GMT or UTC). So in the European Union you would select **Last**, **Sunday**, **March**. The time you type in the **o'clock** field depends on your time zone. In Germany for instance, you would type 2 because Germany's time zone is one hour ahead of GMT or UTC (GMT+1).
End Date	Configure the day and time when Daylight Saving Time ends if you selected **Daylight Savings**. The **o'clock** field uses the 24 hour format. Here are a couple of examples: Daylight Saving Time ends in the United States on the last Sunday of October. Each time zone in the United States stops using Daylight Saving Time at 2 A.M. local time. So in the United States you would select **Last**, **Sunday**, **October** and type 2 in the **o'clock** field. Daylight Saving Time ends in the European Union on the last Sunday of October. All of the time zones in the European Union stop using Daylight Saving Time at the same moment (1 A.M. GMT or UTC). So in the European Union you would select **Last**, **Sunday**, **October**. The time you type in the **o'clock** field depends on your time zone. In Germany for instance, you would type 2 because Germany's time zone is one hour ahead of GMT or UTC (GMT+1).
Apply	Click **Apply** to save your changes back to the device.
Reset	Click **Reset** to begin configuring this screen afresh.

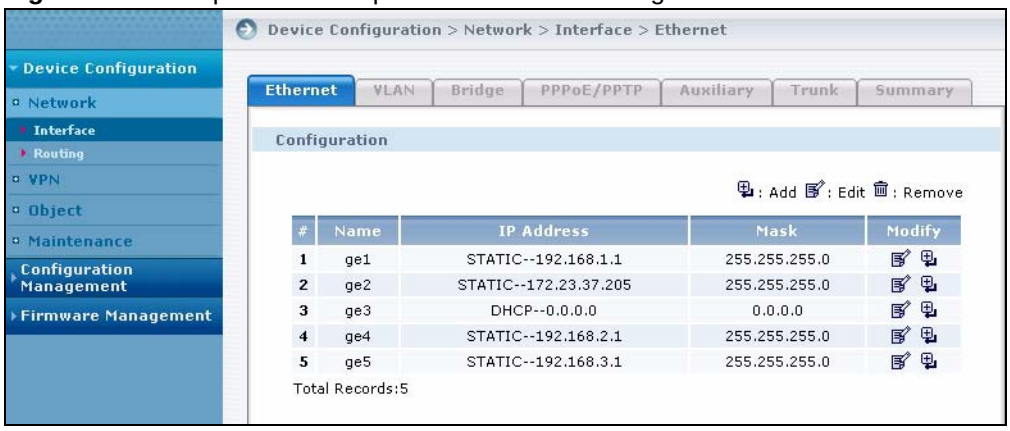
5

Device Network Settings

The screens explained network settings such as LAN, WAN, wireless card.

The menus and screens may vary for different ZyXEL products. For example, click **Device Configuration** > **Network Interface** for ZLD-based device's network settings. This document uses the ZyNOS ZyWALL settings for each screen description. For ZLD-based settings, please see device's User's Guide for the detailed information. An example is shown next.

Figure 26 Example: Device Operation > Device Configuration > Network > Interface (ZLD)

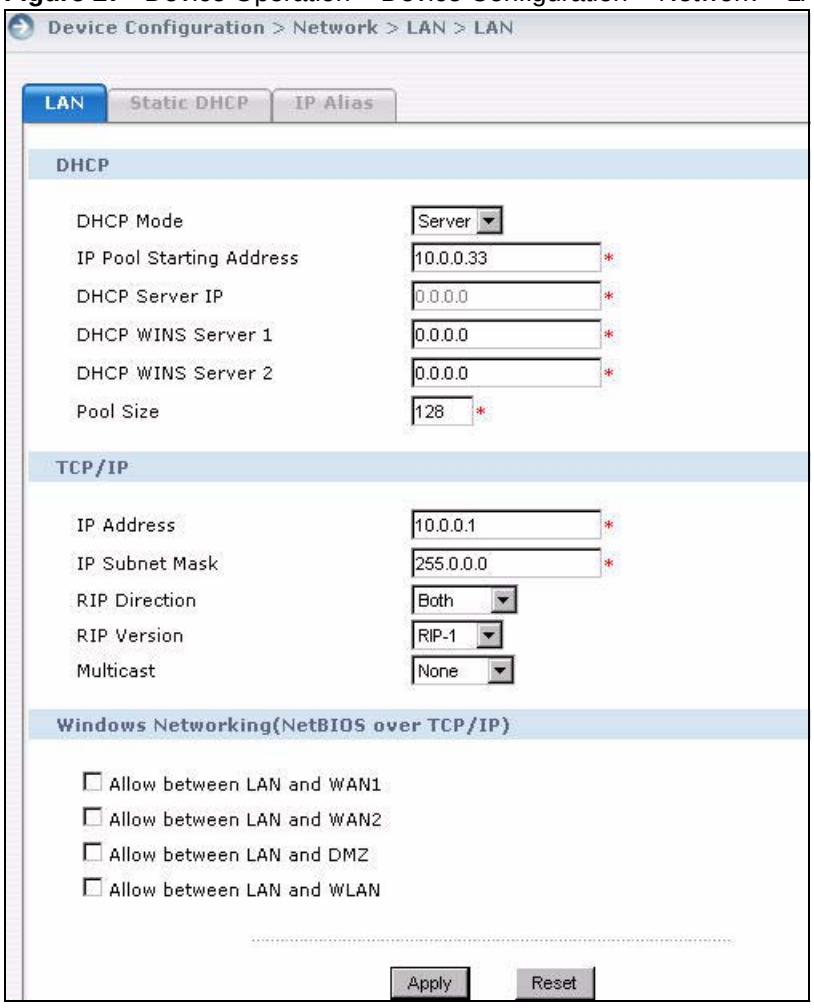


5.1 LAN

This section refers only to the LAN screen, but the information is applicable for the LAN, WLAN, and DMZ screens.

Use this screen to configure the DHCP settings, TCP/IP settings, and NetBIOS settings for the LAN on a ZyNOS ZyWALL. To open this screen, click **Device Operation** in the menu bar, and click **Device Configuration** > **LAN** > **LAN** in the navigation panel.

Figure 27 Device Operation > Device Configuration > Network > LAN > LAN



The following table describes the fields in this screen.

Table 13 Device Operation > Device Configuration > LAN > LAN

LABEL	DESCRIPTION
DHCP Mode	DHCP (Dynamic Host Configuration Protocol, RFC 2131 and RFC 2132) allows individual clients (workstations) to obtain TCP/IP configuration at startup from a server. Unless you are instructed by your ISP, leave this field set to **Server**. When configured as a server, the device provides TCP/IP configuration for the clients. When set as a server, fill in the **IP Pool Starting Address** and **Pool Size** fields. Select **Relay** to have the device forward DHCP requests to another DHCP server. When set to **Relay**, fill in the **DHCP Server IP** field. Select **None** to stop the device from acting as a DHCP server. When you select **None**, you must have another DHCP server on your LAN, or else the computers must be manually configured.
IP Pool Starting Address	This field specifies the first of the contiguous addresses in the IP address pool.
DHCP Server IP	Type the IP address of the DHCP server to which you want the device to relay DHCP requests. Use dotted decimal notation. Alternatively, click the right mouse button to copy and/or paste the IP address.

Table 13 Device Operation > Device Configuration > LAN > LAN (continued)

LABEL	DESCRIPTION
DHCP WINS Server 1, 2	Type the IP address of the WINS (Windows Internet Naming Service) server that you want to send to the DHCP clients. The WINS server keeps a mapping table of the computer names on your network and the IP addresses that they are currently using.
Pool Size	This field specifies the size, or count of the IP address pool.
First DNS Server Second DNS Server Third DNS Server	These fields are enabled if the **DHCP Mode** is **Server**. Specify the DNS servers that are provided to DHCP clients. Select **From ISP** if you want the device to use corresponding DNS server provided by the ISP. Select **User-Defined** and specify the IP address if you want the device to use the specific DNS server. Select **DNS Relay** if you want the device to
TCP/IP	
IP Address	Type the IP address of the device in dotted decimal notation. 192.168.1.1 is the factory default.
IP Subnet Mask	The subnet mask specifies the network number portion of an IP address. The device automatically calculates the subnet mask based on the IP address that you assign. Unless you are implementing subnetting, use the subnet mask computed by the device, which is 255.255.255.0.
RIP Direction	RIP (Routing Information Protocol, RFC1058 and RFC 1389) allows a router to exchange routing information with other routers. The **RIP Direction** field controls the sending and receiving of RIP packets. Select the RIP direction from **Both**/**In Only**/**Out Only**/**None**. When set to **Both** or **Out Only**, the device broadcasts its routing table periodically. When set to **Both** or **In Only**, it incorporates the RIP information that it receives; when set to **None**, it does not send any RIP packets and ignores any RIP packets received. **Both** is the default.
RIP Version	The **RIP Version** field controls the format and the broadcasting method of the RIP packets that the device sends (it recognizes both formats when receiving). **RIP-1** is universally supported but RIP-2 carries more information. **RIP-1** is probably adequate for most networks, unless you have an unusual network topology. Both **RIP-2B** and **RIP-2M** sends the routing data in RIP-2 format; the difference being that **RIP-2B** uses subnet broadcasting while **RIP-2M** uses multicasting. Multicasting can reduce the load on non-router machines since they generally do not listen to the RIP multicast address and so will not receive the RIP packets. However, if one router uses multicasting, then all routers on your network must use multicasting, also. By default, RIP direction is set to **Both** and the **Version** set to **RIP-1**.
Multicast	Select **IGMP V-1** or **IGMP V-2** or **None**. IGMP (Internet Group Multicast Protocol) is a network-layer protocol used to establish membership in a Multicast group - it is not used to carry user data. IGMP version 2 (RFC 2236) is an improvement over version 1 (RFC 1112) but IGMP version 1 is still in wide use. If you would like to read more detailed information about inter operability between IGMP version 2 and version 1, please see *sections 4 and 5 of RFC 2236*.
Windows Networking (NetBIOS over TCP/IP): NetBIOS (Network Basic Input/Output System) are TCP or UDP broadcast packets that enable a computer to connect to and communicate with a LAN. For some dial-up services such as PPPoE or PPTP, NetBIOS packets cause unwanted calls. However it may sometimes be necessary to allow NetBIOS packets to pass through to the WAN in order to find a computer on the WAN.	
Allow between LAN and WAN1	Select this check box to forward NetBIOS packets from the LAN to WAN port 1and from WAN port 1 to the LAN. If your firewall is enabled with the default policy set to block WAN port 1 to LAN traffic, you also need to enable the default WAN port 1 to LAN firewall rule that forwards NetBIOS traffic. Clear this check box to block all NetBIOS packets going from the LAN to WAN port 1 and from WAN port 1 to the LAN.

Table 13 Device Operation > Device Configuration > LAN > LAN (continued)

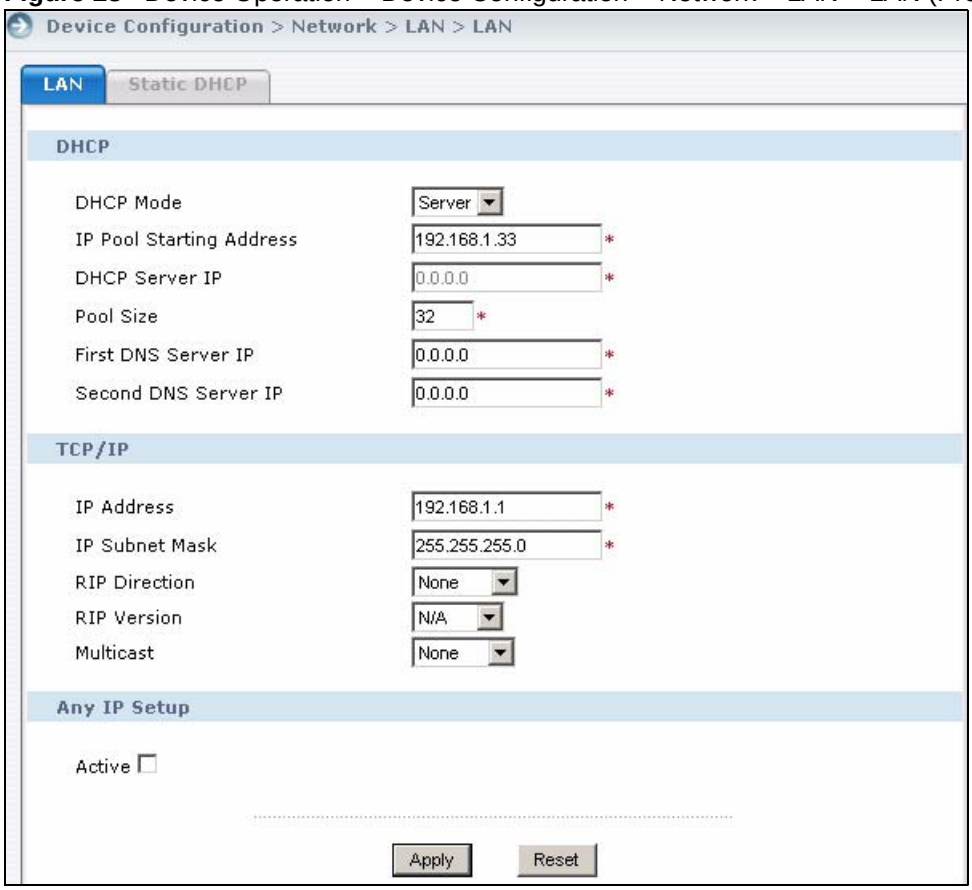
LABEL	DESCRIPTION
Allow between LAN and WAN2	Select this check box to forward NetBIOS packets from the LAN to WAN port 2 and from WAN port 2 to the LAN. If your firewall is enabled with the default policy set to block WAN port 2 to LAN traffic, you also need to enable the default WAN port 2 to LAN firewall rule that forwards NetBIOS traffic. Clear this check box to block all NetBIOS packets going from the LAN to WAN port 2 and from WAN port 2 to the LAN.
Allow between LAN and DMZ	Select this check box to forward NetBIOS packets from the LAN to the DMZ and from the DMZ to the LAN. If your firewall is enabled with the default policy set to block DMZ to LAN traffic, you also need to enable the default DMZ to LAN firewall rule that forwards NetBIOS traffic. Clear this check box to block all NetBIOS packets going from the LAN to the DMZ and from the DMZ to the LAN.
Allow between LAN and WLAN	Select this check box to forward NetBIOS packets from the LAN to the WLAN and from the WLAN to the LAN. Clear this check box to block all NetBIOS packets going from the LAN to the WLAN and from the WLAN to the LAN.
Apply	Click **Apply** to save your changes back to the device.
Reset	Click **Reset** to begin configuring this screen afresh.

5.2 LAN (Prestige)

This section refers only to the LAN screen, but the information is applicable for the LAN, WLAN, and DMZ screens.

Use this screen to configure the DHCP settings, TCP/IP settings, and Any IP settings for the LAN port on a device. To open this screen, click **Device Operation** in the menu bar, and click **Device Configuration** > **Network** > **LAN** > **LAN** in the navigation panel.

Figure 28 Device Operation > Device Configuration > Network > LAN > LAN (Prestige)



The following table describes the fields in this screen.

Table 14 Device Operation > Device Configuration > Network > LAN > LAN (Prestige)

LABEL	DESCRIPTION
DHCP Mode	DHCP (Dynamic Host Configuration Protocol, RFC 2131 and RFC 2132) allows individual clients (computers) to obtain TCP/IP configuration at startup from a server. Select **None** if you do not want to configure DNS servers. If you do not configure a DNS server, you must know the IP address of a machine in order to access it. When configured as a **Server**, the device provides TCP/IP configuration for the clients. When set as a **Server**, fill in the rest of the DHCP setup fields. Select **Relay** to have the device act as a DNS proxy. The device tells the DHCP clients on the LAN that the device itself is the DNS server. When a computer on the LAN sends a DNS query to the device, the device forwards the query to the device's system DNS server and relays the response back to the computer. You can select **Relay** and enter an IP Pool Starting Address. The **First DNS Server IP** and **Second DNS Server IP** will appear as read only fields.
IP Pool Starting Address	This field specifies the first of the contiguous addresses in the IP address pool.
DHCP Server IP	If **Relay** is selected in the DHCP field above, then type the IP address of the actual, remote DHCP server here.
Pool Size	This field specifies the size, or count of the IP address pool.
First DNS Server IP Second DNS Server IP	The device passes a DNS (Domain Name System) server IP address (in the order you specify here) to the DHCP clients. Type your First DNS Server IP and Second DNS Server IP addresses in these fields.

Table 14 Device Operation > Device Configuration > Network > LAN > LAN (Prestige)

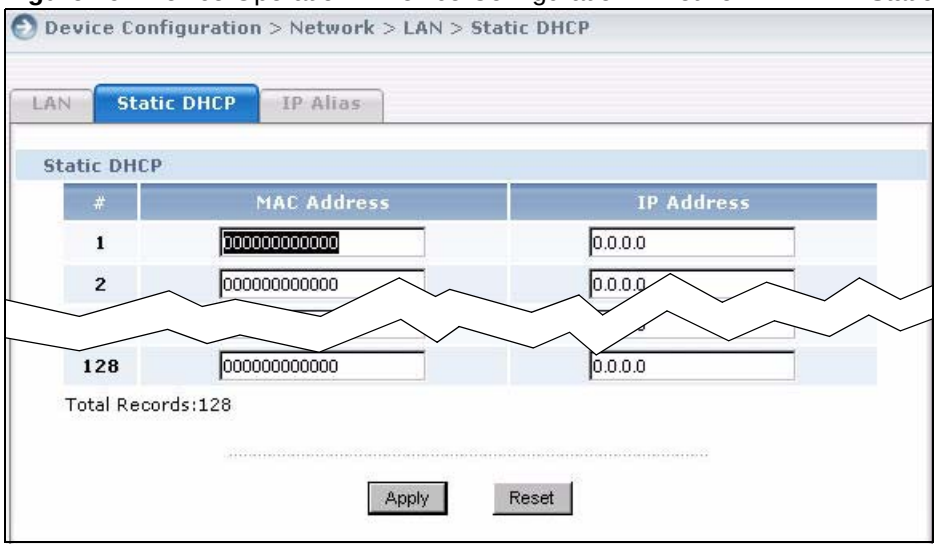
LABEL	DESCRIPTION
TCP/IP	
IP Address	Type the IP address of the device in dotted decimal notation.
IP Subnet Mask	The subnet mask specifies the network number portion of an IP address. Unless you are implementing subnetting, use the “natural” subnet mask, which is usually 255.255.255.0.
RIP Direction	RIP (Routing Information Protocol, RFC1058 and RFC 1389) allows a router to exchange routing information with other routers. The **RIP Direction** field controls the sending and receiving of RIP packets. Select the RIP direction from **Both**/**In Only**/**Out Only**/**None**. When set to **Both** or **Out Only**, the device broadcasts its routing table periodically. When set to **Both** or **In Only**, it incorporates the RIP information that it receives; when set to **None**, it does not send any RIP packets and ignores any RIP packets received. **Both** is the default.
RIP Version	The **RIP Version** field controls the format and the broadcasting method of the RIP packets that the device sends (it recognizes both formats when receiving). **RIP-1** is universally supported but RIP-2 carries more information. **RIP-1** is probably adequate for most networks, unless you have an unusual network topology. Both **RIP-2B** and **RIP-2M** sends the routing data in RIP-2 format; the difference being that **RIP-2B** uses subnet broadcasting while **RIP-2M** uses multicasting. Multicasting can reduce the load on non-router machines since they generally do not listen to the RIP multicast address and so will not receive the RIP packets. However, if one router uses multicasting, then all routers on your network must use multicasting, also. By default, RIP direction is set to **Both** and the **Version** set to **RIP-1**.
Multicast	Select **IGMP V-1** or **IGMP V-2** or **None**. IGMP (Internet Group Multicast Protocol) is a network-layer protocol used to establish membership in a Multicast group - it is not used to carry user data. IGMP version 2 (RFC 2236) is an improvement over version 1 (RFC 1112) but IGMP version 1 is still in wide use. If you would like to read more detailed information about interpretability between IGMP version 2 and version 1, please see *sections 4 and 5 of RFC 2236*.
Any IP Setup	
Active	Select this option to activate the Any-IP feature. This allows a computer to access the Internet without changing the network settings (such as IP address and subnet mask) of the computer, even when the IP addresses of the computer and the device are not in the same subnet. When you disable the Any-IP feature, only computers with dynamic IP addresses or static IP addresses in the same subnet as the device’s LAN IP address can connect to the device or access the Internet through the device.
Apply	Click **Apply** to save your changes back to the device.
Reset	Click **Reset** to begin configuring this screen afresh.

5.2.1 Static DHCP

This section refers only to the LAN screen, but the information is applicable for the LAN, WLAN, and DMZ screens.

Use this screen to assign IP addresses to specific individual computers on the LAN based on their MAC addresses. To open this screen, click **Device Operation** in the menu bar, and click **Device Configuration > Network > LAN > Static DHCP** in the navigation panel.

Figure 29 Device Operation > Device Configuration > Network > LAN > Static DHCP



The following table describes the fields in this screen.

Table 15 Device Operation > Device Configuration > Network > LAN > Static DHCP

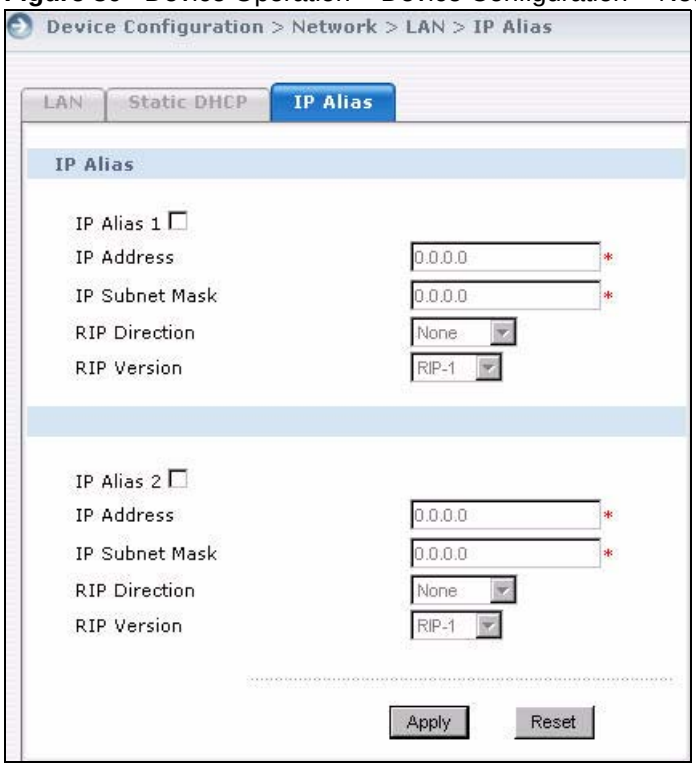
LABEL	DESCRIPTION
Index	This is the index number of the Static IP table entry (row).
MAC Address	This is the MAC address of a computer on the device's LAN.
IP Address	This is the IP address to be assigned to the device with the MAC address above.
Apply	Click **Apply** to save your changes back to the device.
Reset	Click **Reset** to begin configuring this screen afresh.

5.2.2 IP Alias

This section refers only to the LAN screen, but the information is applicable for the LAN, WLAN, and DMZ screens.

Use this screen to configure logical interfaces (subnets) via its single physical Ethernet interface with the device itself being the gateway for each network. You can also configure firewall rules to control access between the logical networks. To open this screen, click **Device Operation > Device Configuration > Network > LAN > IP Alias**.

Figure 30 Device Operation > Device Configuration > Network > LAN > IP Alias



The following table describes the fields in this screen

Table 16 Device Operation > Device Configuration > Network > LAN > IP Alias

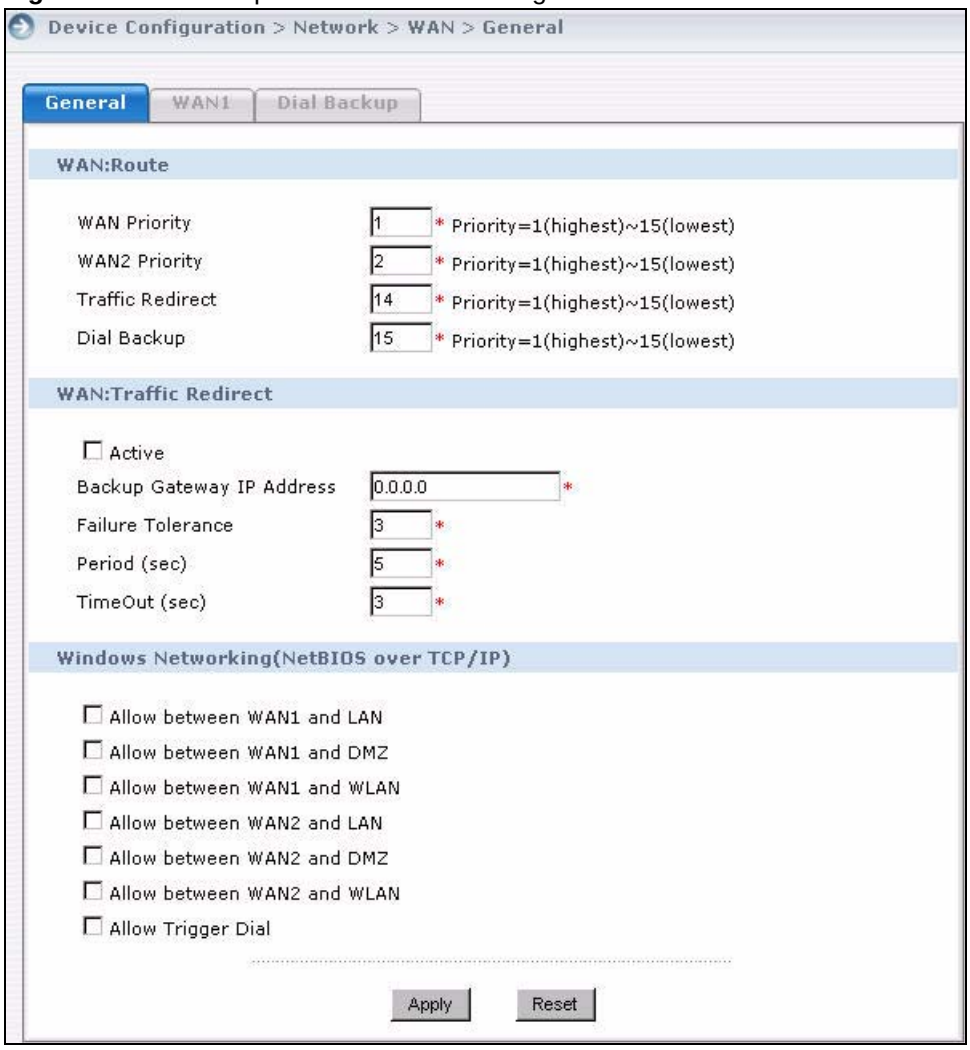
LABEL	DESCRIPTION
IP Alias 1,2	Select the check box to configure another network for the device.
IP Address	Enter the IP address of the device in dotted decimal notation.
IP Subnet Mask	The device automatically calculates the subnet mask based how many aliases you select. See also the appendices for more information on IP subnetting.
RIP Direction	RIP (Routing Information Protocol, RFC1058 and RFC 1389) allows a router to exchange routing information with other routers. The **RIP Direction** field controls the sending and receiving of RIP packets. Select the RIP direction from **Both**/**In Only**/**Out Only**/**None**. When set to **Both** or **Out Only**, the device broadcasts its routing table periodically. When set to **Both** or **In Only**, it incorporates the RIP information that it receives; when set to **None**, it does not send any RIP packets and ignores any RIP packets received.
RIP Version	The **RIP Version** field controls the format and the broadcasting method of the RIP packets that the device sends (it recognizes both formats when receiving). **RIP-1** is universally supported but RIP-2 carries more information. **RIP-1** is probably adequate for most networks, unless you have an unusual network topology. Both **RIP-2B** and **RIP-2M** sends the routing data in RIP-2 format; the difference being that **RIP-2B** uses subnet broadcasting while **RIP-2M** uses multicasting. Multicasting can reduce the load on non-router machines since they generally do not listen to the RIP multicast address and so will not receive the RIP packets. However, if one router uses multicasting, then all routers on your network must use multicasting, also. By default, RIP direction is set to **Both** and the Version set to **RIP-1**.
Apply	Click **Apply** to save your changes back to the device.
Reset	Click **Reset** to begin configuring this screen afresh.

5.3 WAN General (ZyNOS ZyWALL)

This section gives configuration information on the fields displayed in this screen. To open this screen, click **Device Operation** in the menu bar, and click **Device Configuration** > **Network** > **WAN** > **General** in the navigation panel.

Be careful when configuring a device's WAN as an incorrect configuration could result in the device being inaccessible from Vantage CNM (or by the web configurator from the WAN) and may necessitate a site visit to correct.

Figure 31 Device Operation > Device Configuration > Network > WAN > General (ZyWALL)



The following table describes the fields in this screen.

Table 17 Device Operation > Device Configuration > Network > WAN > General (ZyNOS ZyWALL)

LABEL	DESCRIPTION
WAN Priority WAN2 Priority Traffic Redirect Dial Backup	The default WAN connection is "1' as your broadband connection via the WAN port should always be your preferred method of accessing the WAN. The default priority of the routes is **WAN**, **Traffic Redirect** and then **Dial Backup** (dial backup does not apply to all device models): You have two choices for an auxiliary connection in the event that your regular WAN connection goes down. If **Dial Backup** is preferred to **Traffic Redirect**, then type "14" in the **Dial Backup Priority (metric)** field (and leave the **Traffic Redirect Priority (metric)** at the default of "15").
Active	Select this check box to have the device use traffic redirect if the normal WAN connection goes down.
Backup Gateway IP Address	Type the IP address of your backup gateway in dotted decimal notation. The device automatically forwards traffic to this IP address if the device's Internet connection terminates.
Fail Tolerance	Type the number of times the device may attempt and fail to connect to the Internet before traffic is forwarded to the backup gateway.
Period (sec)	Type the number of seconds for the device to wait between checks to see if it can connect to the WAN IP address (**Check WAN IP Address** field) or default gateway. Allow more time if your destination IP address handles lots of traffic.
Timeout (sec)	Type the number of seconds for the device to wait for a ping response from the IP Address in the **Check WAN IP Address** field before it times out. The WAN connection is considered "down" after the device times out the number of times specified in the **Fail Tolerance** field. Use a higher value in this field if your network is busy or congested.
Windows Networking (NetBIOS over TCP/IP):	NetBIOS (Network Basic Input/Output System) are TCP or UDP packets that enable a computer to connect to and communicate with a LAN. For some dial-up services such as PPPoE or PPTP, NetBIOS packets cause unwanted calls.
Allow between WAN1 and LAN	Select this check box to forward NetBIOS packets from the WAN1 port to the LAN port and from the LAN port to WAN1. If your firewall is enabled with the default policy set to block WAN port 1 to LAN traffic, you also need to enable the default WAN1 to LAN firewall rule that forwards NetBIOS traffic. Clear this check box to block all NetBIOS packets going from the WAN1 port to the LAN port and from LAN port to WAN1.
Allow between WAN1 and DMZ	Select this check box to forward NetBIOS packets from the WAN1 port to the DMZ port and from the DMZ port to WAN1. Clear this check box to block all NetBIOS packets going from the WAN1 port to the DMZ port and from DMZ port to WAN1.
Allow between WAN1 and WLAN	Select this check box to forward NetBIOS packets from the WAN1 port to the WLAN port and from the WLAN port to WAN1. Clear this check box to block all NetBIOS packets going from the WAN1 port to the WLAN port and from WLAN port to WAN1.
Allow between WAN2 and LAN	Select this check box to forward NetBIOS packets from the WAN2 port to the LAN port and from the LAN port to WAN2. If your firewall is enabled with the default policy set to block WAN port 2 to LAN traffic, you also need to enable the default WAN2 to LAN firewall rule that forwards NetBIOS traffic. Clear this check box to block all NetBIOS packets going from the WAN2 port to the LAN port and from LAN port to WAN2.

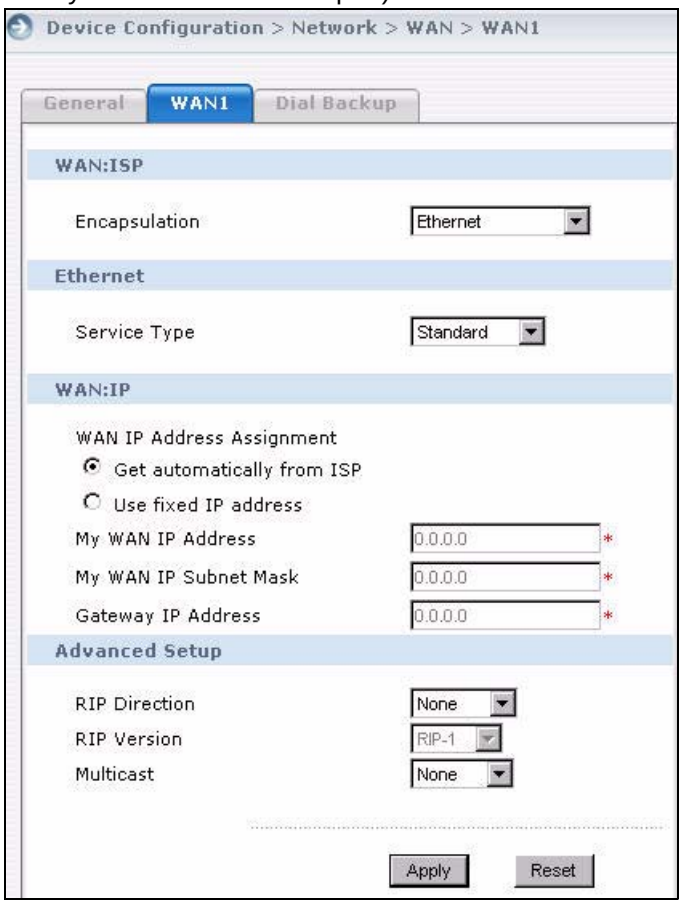
Table 17 Device Operation > Device Configuration > Network > WAN > General (ZyNOS ZyWALL) (continued)

LABEL	DESCRIPTION
Allow between WAN2 and DMZ	Select this check box to forward NetBIOS packets from the WAN2 port to the DMZ port and from the DMZ port to WAN2. Clear this check box to block all NetBIOS packets going from the WAN2 port to the DMZ port and from DMZ port to WAN2.
Allow between WAN2 and WLAN	Select this check box to forward NetBIOS packets from the WAN2 port to the WLAN port and from the WLAN port to WAN2. Clear this check box to block all NetBIOS packets going from the WAN2 port to the WLAN port and from WLAN port to WAN2.
Allow Trigger Dial	Select this option to allow NetBIOS packets to initiate calls.
Apply	Click **Apply** to save your changes back to the device.
Reset	Click **Reset** to begin configuring this screen afresh.

5.3.1 WAN1 (ZyNOS ZyWALL with one WAN port)

The screen differs by the encapsulation type chosen.

Figure 32 Device Operation > Device Configuration > Network > WAN > WAN1 (ZyNOS ZyWALL with one WAN port)



5.3.1.1 Ethernet Encapsulation

The following table describes the labels in the **Ethernet** encapsulation screen.

Table 18 Device Operation > Device Configuration > Network > WAN > ISP (Ethernet) – ZyNOS ZyWALL (one WAN port)

LABEL	DESCRIPTION
Encapsulation	You must choose the Ethernet option when the WAN port is used as a regular Ethernet.
Service Type	Choose from **Standard**, **Telstra** (RoadRunner Telstra authentication method), **RR-Manager** (Roadrunner Manager authentication method), **RR-Toshiba** (Roadrunner Toshiba authentication method) or **Telia Login**. The following fields do not appear with the **Standard** service type.
WAN:IP	
WAN IP Address Assignment	Select **Get automatically from ISP** If your ISP did not assign you a fixed IP address. This is the default selection. Select **Use fixed IP address** If the ISP assigned a fixed IP address.
My WAN IP Address	Enter your WAN IP address in this field if you selected **Use Fixed IP Address.**
My WAN IP Subnet Mask	Enter the IP subnet mask (if your ISP gave you one) in this field if you selected **Use Fixed IP Address**.
Gateway IP Address	Enter the gateway or remote IP address (if your ISP gave you one) in this field if you selected **Use Fixed IP Address**.
Advanced Setup	
RIP Direction	RIP (Routing Information Protocol) allows a router to exchange routing information with other routers. The **RIP Direction** field controls the sending and receiving of RIP packets. Choose **Both**, **None**, **In Only** or **Out Only**. When set to **Both** or **Out Only**, the device will broadcast its routing table periodically. When set to **Both** or **In Only**, the device will incorporate RIP information that it receives. When set to **None**, the device will not send any RIP packets and will ignore any RIP packets received. By default, **RIP Direction** is set to **Both**.
RIP Version	The **RIP Version** field controls the format and the broadcasting method of the RIP packets that the device sends (it recognizes both formats when receiving). Choose **RIP-1**, **RIP-2B** or **RIP-2M**. **RIP-1** is universally supported; but **RIP-2** carries more information. RIP-1 is probably adequate for most networks, unless you have an unusual network topology. Both **RIP-2B** and **RIP-2M** sends the routing data in RIP-2 format; the difference being that RIP-2B uses subnet broadcasting while RIP-2M uses multicasting. Multicasting can reduce the load on non-router machines since they generally do not listen to the RIP multicast address and so will not receive the RIP packets. However, if one router uses multicasting, then all routers on your network must use multicasting, also. By default, the **RIP Version** field is set to **RIP-1**.
Multicast	Choose **None** (default), **IGMP-V1** or **IGMP-V2**. IGMP (Internet Group Multicast Protocol) is a network-layer protocol used to establish membership in a Multicast group - it is not used to carry user data. IGMP version 2 (RFC 2236) is an improvement over version 1 (RFC 1112) but IGMP version 1 is still in wide use. If you would like to read more detailed information about inter operability between IGMP version 2 and version 1, please see sections 4 and 5 of RFC 2236.

Table 18 Device Operation > Device Configuration > Network > WAN > ISP (Ethernet) – ZyNOS ZyWALL (one WAN port) (continued)

LABEL	DESCRIPTION
Apply	Click **Apply** to save your changes back to the device.
Reset	Click **Reset** to begin configuring this screen afresh.

5.3.1.2 PPPoE Encapsulation

The device supports PPPoE (Point-to-Point Protocol over Ethernet). PPPoE is an IETF Draft standard (RFC 2516) specifying how a personal computer (PC) interacts with a broadband modem (DSL, cable, wireless, etc.) connection. The **PPPoE** option is for a dial-up connection using PPPoE.

For the service provider, PPPoE offers an access and authentication method that works with existing access control systems (for example Radius). PPPoE provides a login and authentication method that the existing Microsoft Dial-Up Networking software can activate, and therefore requires no new learning or procedures for Windows users.

One of the benefits of PPPoE is the ability to let you access one of multiple network services, a function known as dynamic service selection. This enables the service provider to easily create and offer new IP services for individuals.

Operationally, PPPoE saves significant effort for both you and the ISP or carrier, as it requires no specific configuration of the broadband modem at the customer site.

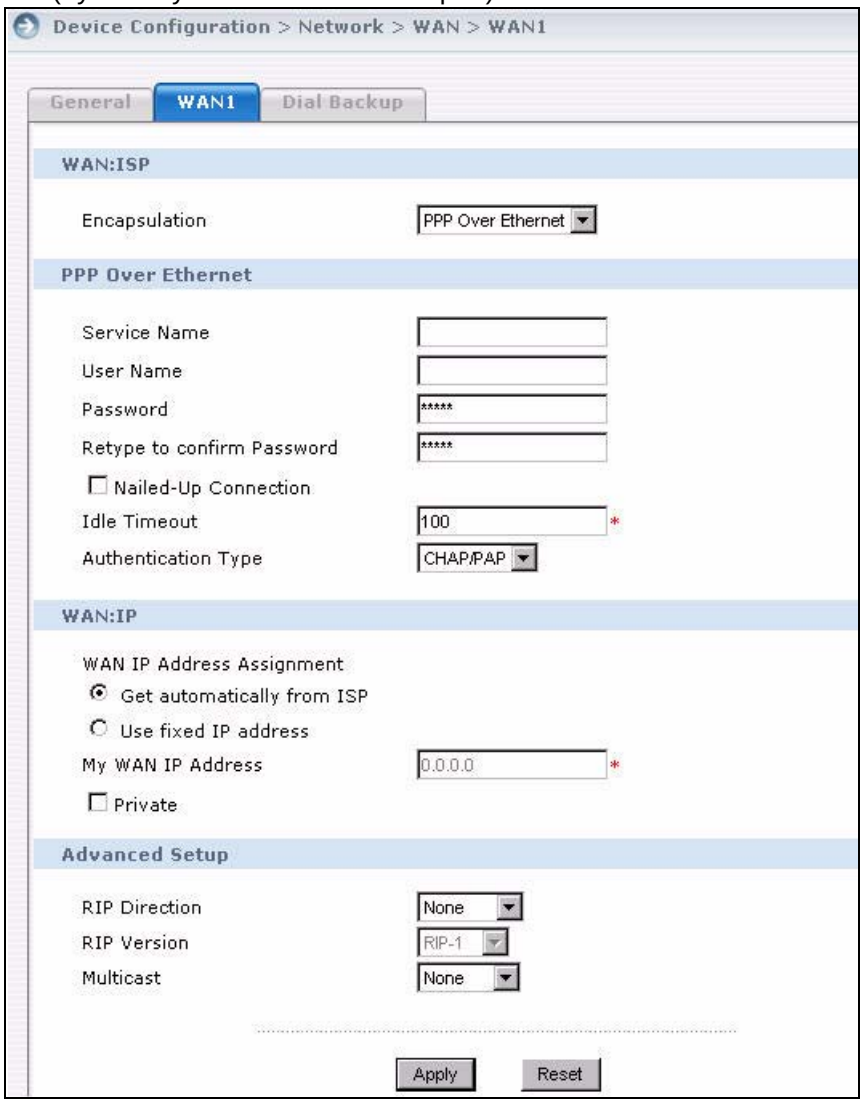
By implementing PPPoE directly on the device (rather than individual computers), the computers on the LAN do not need PPPoE software installed, since the device does that part of the task. Furthermore, with NAT, all of the LANs' computers will have access.

Select PPP Over Ethernet from the Encapsulation field. A warning message appears. Click **OK**.

Figure 33 Warning Message When Select PPPoE

Microsoft Internet Explorer
You may lose connection with the device if you change the WAN encapsulation mode.
OK
Cancel

Figure 34 Device Operation > Device Configuration > Network > WAN > WAN1-PPPoE (ZyNOS ZyWALL with one WAN port)



The following table describes the labels in the **PPPoE** screen.

Table 19 Device Operation > Device Configuration > Network > WAN > ISP (PPPoE) – ZyNOS ZyWALL (one WAN port)

LABEL	DESCRIPTION
WAN:ISP	
Encapsulation	The PPPoE choice is for a dial-up connection using PPPoE. The router supports PPPoE (Point-to-Point Protocol over Ethernet). PPPoE is an IETF Draft standard (RFC 2516) specifying how a personal computer (PC) interacts with a broadband modem (for example, xDSL, cable, wireless, etc.) connection. Operationally, PPPoE saves significant effort for both the end user and ISP/carrier, as it requires no specific configuration of the broadband modem at the customer site. By implementing PPPoE directly on the router rather than individual computers, the computers on the LAN do not need PPPoE software installed, since the router does that part of the task. Further, with NAT, all of the LAN's computers will have access.
PPP Over Ethernet	

Table 19 Device Operation > Device Configuration > Network > WAN > ISP (PPPoE) – ZyNOS ZyWALL (one WAN port) (continued)

LABEL	DESCRIPTION
Service Name	Type the PPPoE service name provided to you. PPPoE uses a service name to identify and reach the PPPoE server.
User Name	Type the user name given to you by your ISP.
Password	Type the password associated with the User Name above.
Retype to confirm Password	Type your password again to make sure that you have entered it correctly.
Nailed-Up Connection	Select **Nailed-Up Connection** if you do not want the connection to time out.
Idle Timeout	This value specifies the time in seconds that elapses before the router automatically disconnects from the PPPoE server.
Authentication Type	Use the drop-down list box to select an authentication protocol for outgoing calls. Options are: **CHAP/PAP** - Your Vantage CNM accepts either CHAP or PAP when requested by this remote node. **CHAP** - Your Vantage CNM accepts CHAP only. **PAP** - Your Vantage CNM accepts PAP only.
WAN:IP	
WAN IP Address Assignment	Select **Get automatically from ISP** If your ISP did not assign you a fixed IP address. This is the default selection. Select **Use fixed IP address** If the ISP assigned a fixed IP address.
My WAN IP Address	Enter your WAN IP address in this field if you selected **Use Fixed IP Address.**
Private	This parameter determines if the device will include the route to this remote node in its RIP broadcasts. If set to Yes, this route is kept private and not included in RIP broadcast. If No, the route to this remote node will be propagated to other hosts through RIP broadcasts.
Advanced Setup	
RIP Direction	RIP (Routing Information Protocol) allows a router to exchange routing information with other routers. The **RIP Direction** field controls the sending and receiving of RIP packets. Choose **Both**, **None**, **In Only** or **Out Only**. When set to **Both** or **Out Only**, the device will broadcast its routing table periodically. When set to **Both** or **In Only**, the device will incorporate RIP information that it receives. When set to **None**, the device will not send any RIP packets and will ignore any RIP packets received. By default, **RIP Direction** is set to **Both**.
RIP Version	The **RIP Version** field controls the format and the broadcasting method of the RIP packets that the device sends (it recognizes both formats when receiving). Choose **RIP-1**, **RIP-2B** or **RIP-2M**. **RIP-1** is universally supported; but **RIP-2** carries more information. RIP-1 is probably adequate for most networks, unless you have an unusual network topology. Both **RIP-2B** and **RIP-2M** sends the routing data in RIP-2 format; the difference being that RIP-2B uses subnet broadcasting while RIP-2M uses multicasting. Multicasting can reduce the load on non-router machines since they generally do not listen to the RIP multicast address and so will not receive the RIP packets. However, if one router uses multicasting, then all routers on your network must use multicasting, also. By default, the **RIP Version** field is set to **RIP-1**.

Table 19 Device Operation > Device Configuration > Network > WAN > ISP (PPPoE) – ZyNOS ZyWALL (one WAN port) (continued)

LABEL	DESCRIPTION
Multicast	Choose **None** (default), **IGMP-V1** or **IGMP-V2**. IGMP (Internet Group Multicast Protocol) is a network-layer protocol used to establish membership in a Multicast group - it is not used to carry user data. IGMP version 2 (RFC 2236) is an improvement over version 1 (RFC 1112) but IGMP version 1 is still in wide use. If you would like to read more detailed information about inter operability between IGMP version 2 and version 1, please see sections 4 and 5 of RFC 2236.
Apply	Click **Apply** to save your changes back to the device.
Reset	Click **Reset** to begin configuring this screen afresh.

5.3.1.3 PPTP Encapsulation

Point-to-Point Tunneling Protocol (PPTP) is a network protocol that enables secure transfer of data from a remote client to a private server, creating a Virtual Private Network (VPN) using TCP/IP-based networks.

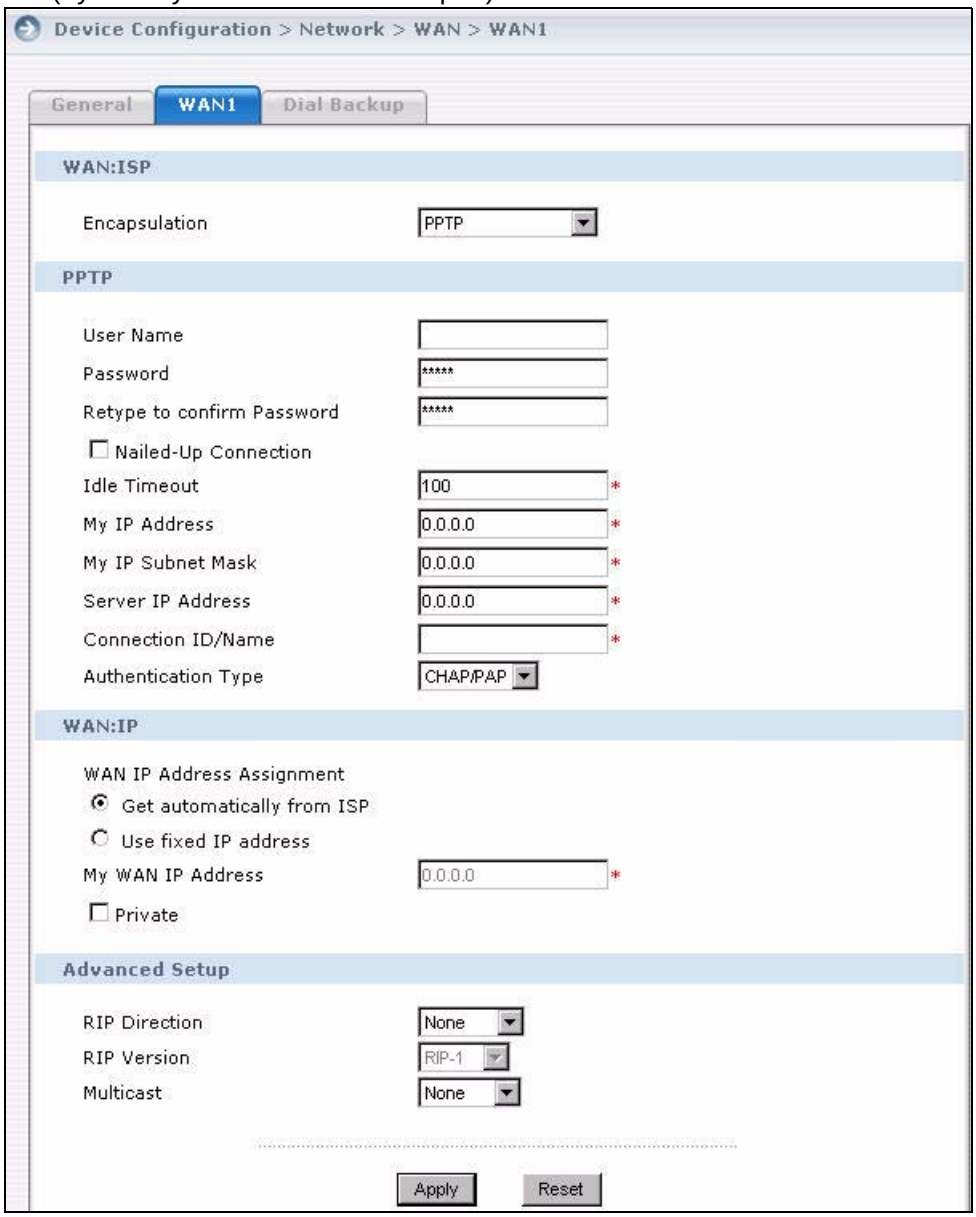
PPTP supports on-demand, multi-protocol and virtual private networking over public networks, such as the Internet.

Select PPP Over Ethernet from the Encapsulation field. A warning message appears. Click **OK**.

Figure 35 Warning Message When Select PPTP

Microsoft Internet Explorer
You may lose connection with the device if you change the WAN encapsulation mode.
OK
Cancel

Figure 36 Device Operation > Device Configuration > Network > WAN > WAN1 - PPTP (ZyNOS ZyWALL with one WAN port)



The following table describes the labels in the **PPTP** screen.

Table 20 Device Operation > Device Configuration > Network > WAN > ISP (PPTP) – ZyNOS ZyWALL (one WAN port)

LABEL	DESCRIPTION
WAN:ISP	
Encapsulation	Point-to-Point Tunneling Protocol (PPTP) is a network protocol that enables secure transfer of data from a remote client to a private server, creating a Virtual Private Network (VPN) using TCP/IP-based networks. PPTP supports on-demand, multi-protocol, and virtual private networking over public networks, such as the Internet. The device supports only one PPTP server connection at any given time. To configure a PPTP client, you must configure the **User Name** and **Password** fields for a PPP connection and the PPTP parameters for a PPTP connection.

Table 20 Device Operation > Device Configuration > Network > WAN > ISP (PPTP) – ZyNOS ZyWALL (one WAN port) (continued)

LABEL	DESCRIPTION
PPTP	
User Name	Type the user name given to you by your ISP.
Password	Type the password associated with the User Name above.
Retype to confirm Password	Type your password again to make sure that you have entered it correctly.
Nailed-up Connection	Select **Nailed-Up Connection** if you do not want the connection to time out.
Idle Timeout	This value specifies the time in seconds that elapses before the device automatically disconnects from the PPTP server.
My IP Address	Type the (static) IP address assigned to you by your ISP.
My IP Subnet Mask	The device will automatically calculate the subnet mask based on the IP address that you assign. Unless you are implementing subnetting, use the subnet mask computed by the device.
Server IP Address	Type the IP address of the PPTP server.
Connection ID/Name	Type your identification name for the PPTP server.
Authentication Type	Use the drop-down list box to select an authentication protocol for outgoing calls. Options are: **CHAP/PAP** - Your Vantage CNM accepts either CHAP or PAP when requested by this remote node. **CHAP** - Your Vantage CNM accepts CHAP only. **PAP** - Your Vantage CNM accepts PAP only.
WAN:IP	
WAN IP Address Assignment	Select **Get automatically from ISP** If your ISP did not assign you a fixed IP address. This is the default selection. Select **Use fixed IP address** If the ISP assigned a fixed IP address.
My WAN IP Address	Enter your WAN IP address in this field if you selected **Use Fixed IP Address.**
Private	This parameter determines if the device will include the route to this remote node in its RIP broadcasts. If set to Yes, this route is kept private and not included in RIP broadcast. If No, the route to this remote node will be propagated to other hosts through RIP broadcasts.
Advanced Setup	
RIP Direction	RIP (Routing Information Protocol) allows a router to exchange routing information with other routers. The **RIP Direction** field controls the sending and receiving of RIP packets. Choose **Both**, **None**, **In Only** or **Out Only**. When set to **Both** or **Out Only**, the device will broadcast its routing table periodically. When set to **Both** or **In Only**, the device will incorporate RIP information that it receives. When set to **None**, the device will not send any RIP packets and will ignore any RIP packets received. By default, **RIP Direction** is set to **Both**.

Table 20 Device Operation > Device Configuration > Network > WAN > ISP (PPTP) – ZyNOS ZyWALL (one WAN port) (continued)

LABEL	DESCRIPTION
RIP Version	The **RIP Version** field controls the format and the broadcasting method of the RIP packets that the device sends (it recognizes both formats when receiving). Choose **RIP-1**, **RIP-2B** or **RIP-2M**. **RIP-1** is universally supported; but **RIP-2** carries more information. RIP-1 is probably adequate for most networks, unless you have an unusual network topology. Both **RIP-2B** and **RIP-2M** sends the routing data in RIP-2 format; the difference being that RIP-2B uses subnet broadcasting while RIP-2M uses multicasting. Multicasting can reduce the load on non-router machines since they generally do not listen to the RIP multicast address and so will not receive the RIP packets. However, if one router uses multicasting, then all routers on your network must use multicasting, also. By default, the **RIP Version** field is set to **RIP-1**.
Multicast	Choose **None** (default), **IGMP-V1** or **IGMP-V2**. IGMP (Internet Group Multicast Protocol) is a network-layer protocol used to establish membership in a Multicast group - it is not used to carry user data. IGMP version 2 (RFC 2236) is an improvement over version 1 (RFC 1112) but IGMP version 1 is still in wide use. If you would like to read more detailed information about inter operability between IGMP version 2 and version 1, please see sections 4 and 5 of RFC 2236.
Apply	Click **Apply** to save your changes back to the device.
Reset	Click **Reset** to begin configuring this screen afresh.

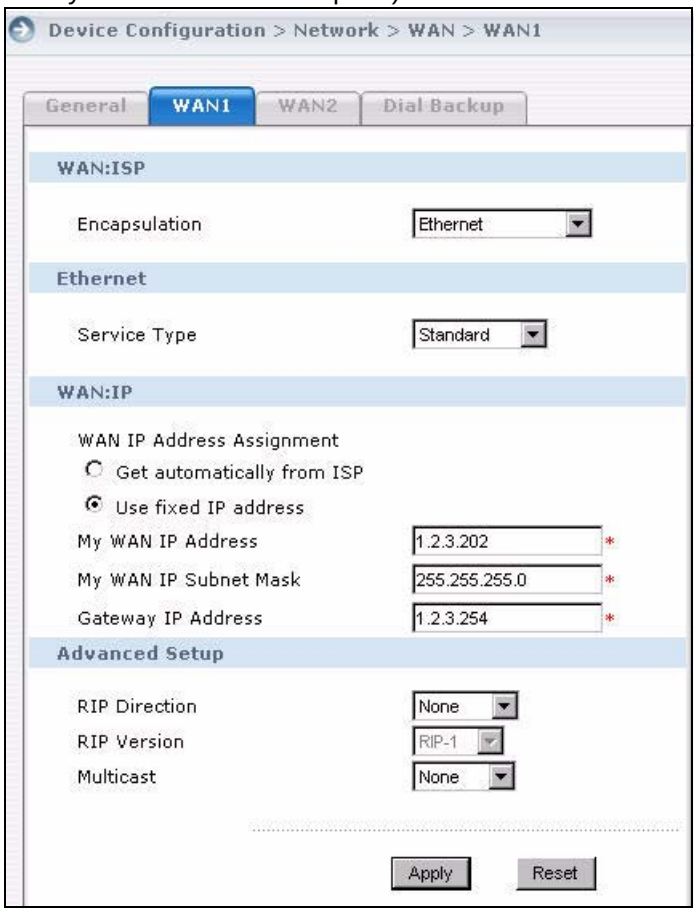
5.3.2 WAN1 and WAN2 (ZyNOS ZyWALL with two WAN ports)

Since ZyWALL 4.00, the WAN screens are organized differently than the previous versions because it has two WAN ports. Use the **WAN1** and **WAN2** tabs to configure the **WAN1** and **WAN2** ports. These tabs are similar and vary by encapsulation type.

5.3.2.1 Ethernet Encapsulation

Use this screen to configure an Ethernet connection on one of the device's WAN ports. To open this screen, click **Device Operation** > **Device Configuration** > **Network** > **WAN** > **WAN1/2**.

Figure 37 Device Operation > Device Configuration > Network > WAN > WAN1/2 (ZyNOS ZyWALL with two WAN ports)



The following table describes the labels in this screen.

Table 21 Device Operation > Device Configuration > Network > WAN > WAN1/2 (ZyNOS ZyWALL with two WAN ports)

LABEL	DESCRIPTION
ISP Parameters for Internet Access	
Encapsulation	You must choose the Ethernet option when the WAN port is used as a regular Ethernet.
Service Type	Choose from **Standard**, **RR-Telstra** (RoadRunner Telstra authentication method), **RR-Manager** (Roadrunner Manager authentication method), **RR-Toshiba** (Roadrunner Toshiba authentication method) or **Telia Login**. The following fields do not appear with the **Standard** service type.
User Name	Type the user name given to you by your ISP.
Password	Type the password associated with the user name above.
Retype to confirm Password	Type your password again to make sure that you have entered is correctly.
Login Server IP Address	Type the authentication server IP address here if your ISP gave you one. This field is not available for Telia Login.

Table 21 Device Operation > Device Configuration > Network > WAN > WAN1/2 (ZyNOS ZyWALL with two WAN ports) (continued)

LABEL	DESCRIPTION
Telia Login Server (Telia Login only)	Type the domain name of the Telia login server, for example login1.telia.com.
Relogin Every(mins) (Telia Login only)	The Telia server logs the Vantage CNM out if the Vantage CNM does not log in periodically. Type the number of minutes from 1 to 59 (30 default) for the Vantage CNM to wait between logins.
WAN IP Address Assignment	
Get automatically from ISP	Select this option If your ISP did not assign you a fixed IP address. This is the default selection.
Use fixed IP address	Select this option If the ISP assigned a fixed IP address.
My WAN IP Address	Enter your WAN IP address in this field if you selected **Use Fixed IP Address**.
My WAN IP Subnet Mask	Enter the IP subnet mask (if your ISP gave you one) in this field if you selected **Use Fixed IP Address**.
Gateway IP Address	Enter the gateway IP address (if your ISP gave you one) in this field if you selected **Use Fixed IP Address**.
Advanced Setup	
RIP Direction	RIP (Routing Information Protocol) allows a router to exchange routing information with other routers. The **RIP Direction** field controls the sending and receiving of RIP packets. Choose **Both**, **None**, **In Only** or **Out Only**. When set to **Both** or **Out Only**, the Vantage CNM will broadcast its routing table periodically. When set to **Both** or **In Only**, the Vantage CNM will incorporate RIP information that it receives. When set to **None**, the Vantage CNM will not send any RIP packets and will ignore any RIP packets received. By default, **RIP Direction** is set to **Both**.
RIP Version	The **RIP Version** field controls the format and the broadcasting method of the RIP packets that the Vantage CNM sends (it recognizes both formats when receiving). Choose **RIP-1**, **RIP-2B** or **RIP-2M**. **RIP-1** is universally supported; but **RIP-2** carries more information. RIP-1 is probably adequate for most networks, unless you have an unusual network topology. Both **RIP-2B** and **RIP-2M** sends the routing data in RIP-2 format; the difference being that RIP-2B uses subnet broadcasting while RIP-2M uses multicasting. Multicasting can reduce the load on non-router machines since they generally do not listen to the RIP multicast address and so will not receive the RIP packets. However, if one router uses multicasting, then all routers on your network must use multicasting, also. By default, the **RIP Version** field is set to **RIP-1**.
Multicast Version	Choose **None** (default), **IGMP-V1** or **IGMP-V2**. IGMP (Internet Group Multicast Protocol) is a network-layer protocol used to establish membership in a Multicast group – it is not used to carry user data. IGMP version 2 (RFC 2236) is an improvement over version 1 (RFC 1112) but IGMP version 1 is still in wide use. If you would like to read more detailed information about interoperability between IGMP version 2 and version 1, please see sections 4 and 5 of RFC 2236.
Apply	Click **Apply** to save your changes back to the Vantage CNM.
Reset	Click **Reset** to begin configuring this screen afresh.

5.3.2.2 PPPoE Encapsulation

PPPoE (Point-to-Point Protocol over Ethernet) is an IETF standard (RFC 2516) specifying how a personal computer (PC) interacts with a broadband modem (DSL, cable, wireless, etc.) connection. The **PPPoE** option is for a dial-up connection using PPPoE.

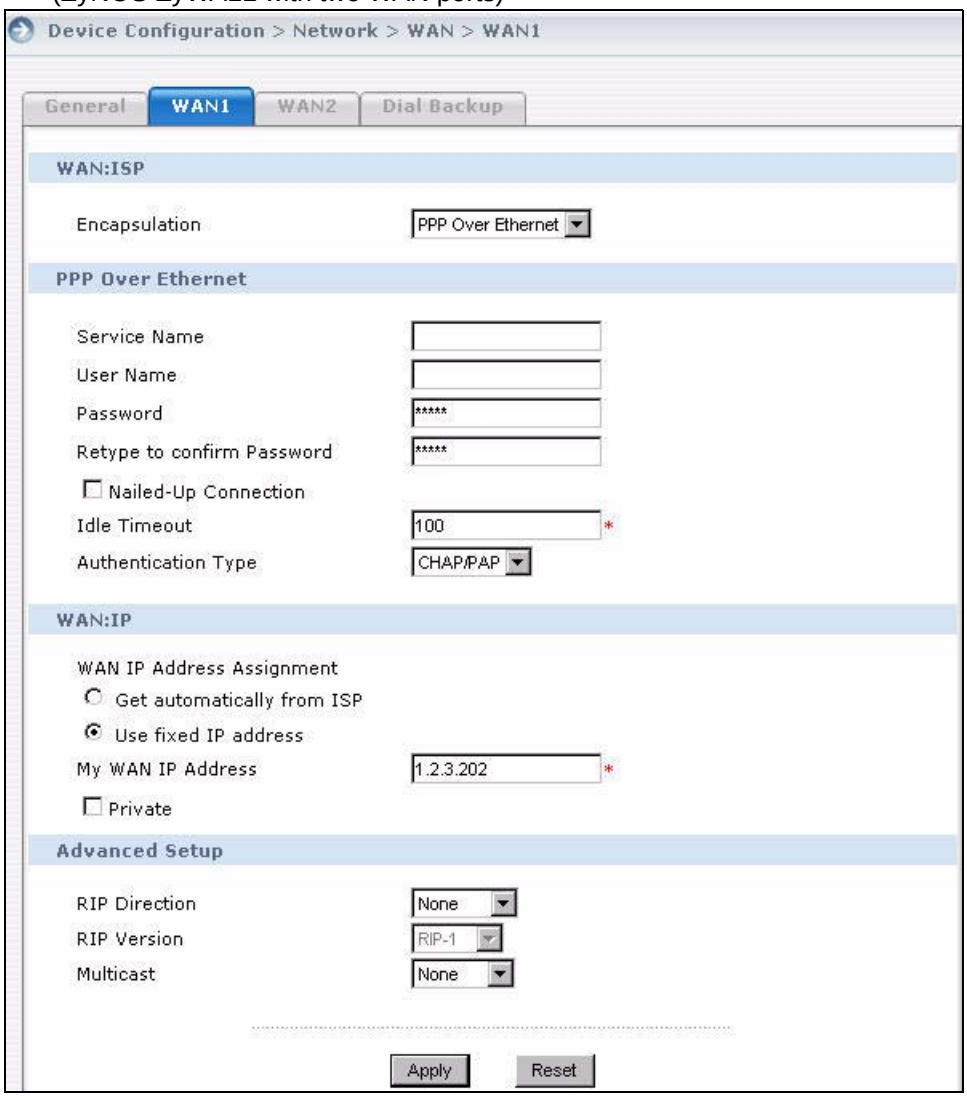
For the service provider, PPPoE offers an access and authentication method that works with existing access control systems (for example RADIUS).

One of the benefits of PPPoE is the ability to let you access one of multiple network services, a function known as dynamic service selection. This enables the service provider to easily create and offer new IP services for individuals.

Operationally, PPPoE saves significant effort for both you and the ISP or carrier, as it requires no specific configuration of the broadband modem at the customer site.

By implementing PPPoE directly on the device (rather than individual computers), the computers on the LAN do not need PPPoE software installed, since the device does that part of the task. Furthermore, with NAT, all of the LANs' computers will have access.

Figure 38 Device Operation > Device Configuration > Network > WAN > WAN1/2 - PPPoE (ZyNOS ZyWALL with two WAN ports)



The following table describes the labels in this screen.

Table 22 Device Operation > Device Configuration > Network > WAN > WAN1/2 - PPPoE (ZyNOS ZyWALL with two WAN ports)

LABEL	DESCRIPTION
ISP Parameters for Internet Access	
Encapsulation	The PPPoE choice is for a dial-up connection using PPPoE. The router supports PPPoE (Point-to-Point Protocol over Ethernet). PPPoE is an IETF standard (RFC 2516) specifying how a personal computer (PC) interacts with a broadband modem (for example, DSL, cable, wireless, etc.) connection. Operationally, PPPoE saves significant effort for both the end user and ISP/carrier, as it requires no specific configuration of the broadband modem at the customer site. By implementing PPPoE directly on the router rather than individual computers, the computers on the LAN do not need PPPoE software installed, since the router does that part of the task. Further, with NAT, all of the LAN's computers will have access.
Service Name	Type the PPPoE service name provided to you. PPPoE uses a service name to identify and reach the PPPoE server.
User Name	Type the user name given to you by your ISP.
Password	Type the password associated with the user name above.
Retype to confirm Password	Type your password again to make sure that you have entered is correctly.
Nailed-Up Connection	Select this if you do not want the connection to time out.
Idle Timeout	This value specifies the time in seconds that elapses before the device automatically disconnects from the PPPoE server.
Authentication Type	Use the drop-down list box to select an authentication protocol for outgoing calls. Options are: **CHAP/PAP** - Your Vantage CNM accepts either CHAP or PAP when requested by this remote node. **CHAP** - Your Vantage CNM accepts CHAP only. **PAP** - Your Vantage CNM accepts PAP only.
WAN IP Address Assignment	
Get automatically from ISP	Select this option If your ISP did not assign you a fixed IP address. This is the default selection.
Use Fixed IP Address	Select this option If the ISP assigned a fixed IP address.
My WAN IP Address	Enter your WAN IP address in this field if you selected **Use Fixed IP Address.**
Private	This parameter determines if the device will include this route to a remote node in its RIP broadcasts. Select this check box to keep this route private and not included in RIP broadcasts. Clear this check box to propagate this route to other hosts through RIP broadcasts.
Advanced Setup	

Table 22 Device Operation > Device Configuration > Network > WAN > WAN1/2 - PPPoE (ZyNOS ZyWALL with two WAN ports) (continued)

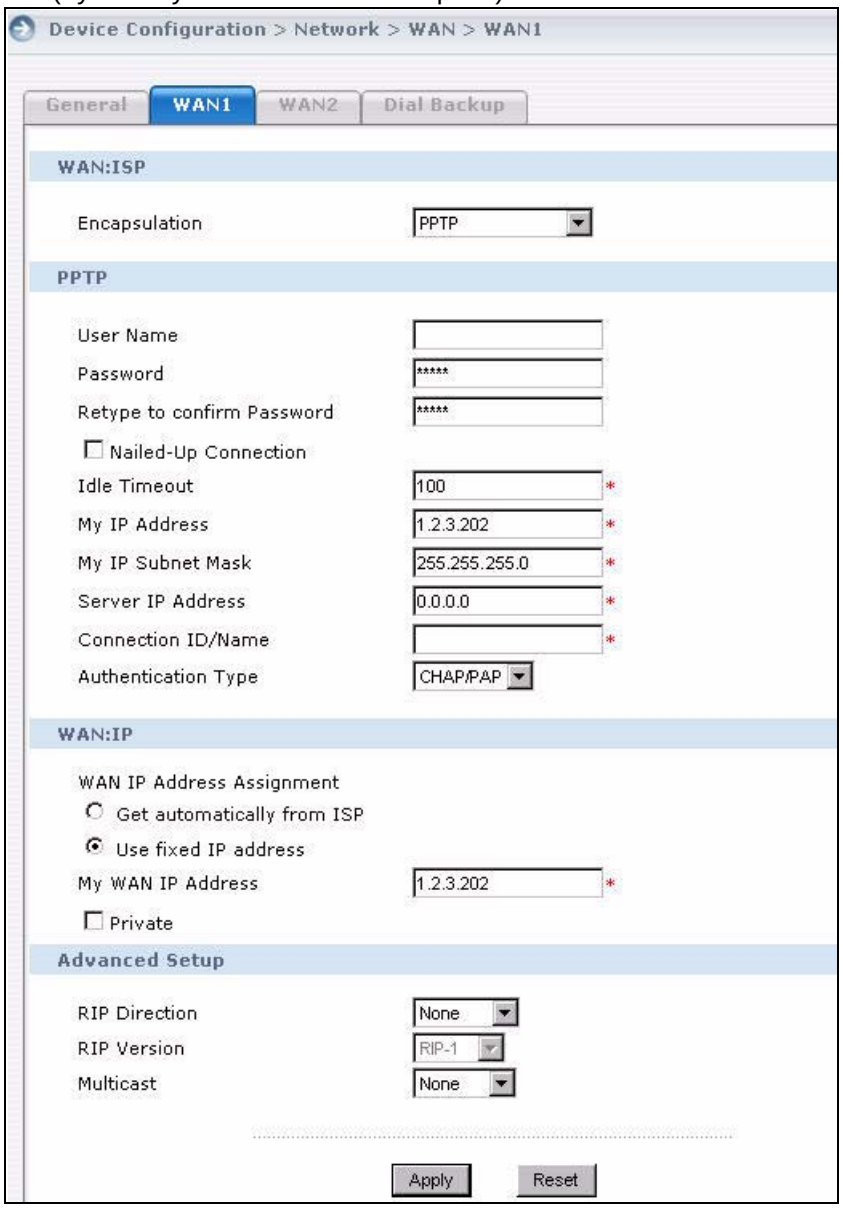
LABEL	DESCRIPTION
RIP Direction	RIP (Routing Information Protocol) allows a router to exchange routing information with other routers. The **RIP Direction** field controls the sending and receiving of RIP packets. Choose **Both**, **None**, **In Only** or **Out Only**. When set to **Both** or **Out Only**, the Vantage CNM will broadcast its routing table periodically. When set to **Both** or **In Only**, the Vantage CNM will incorporate RIP information that it receives. When set to **None**, the Vantage CNM will not send any RIP packets and will ignore any RIP packets received. By default, **RIP Direction** is set to **Both**.
RIP Version	The **RIP Version** field controls the format and the broadcasting method of the RIP packets that the Vantage CNM sends (it recognizes both formats when receiving). Choose **RIP-1**, **RIP-2B** or **RIP-2M**. **RIP-1** is universally supported; but **RIP-2** carries more information. RIP-1 is probably adequate for most networks, unless you have an unusual network topology. Both **RIP-2B** and **RIP-2M** sends the routing data in RIP-2 format; the difference being that RIP-2B uses subnet broadcasting while RIP-2M uses multicasting. Multicasting can reduce the load on non-router machines since they generally do not listen to the RIP multicast address and so will not receive the RIP packets. However, if one router uses multicasting, then all routers on your network must use multicasting, also. By default, the **RIP Version** field is set to **RIP-1**.
Multicast	Choose **None** (default), **IGMP-V1** or **IGMP-V2**. IGMP (Internet Group Multicast Protocol) is a network-layer protocol used to establish membership in a Multicast group – it is not used to carry user data. IGMP version 2 (RFC 2236) is an improvement over version 1 (RFC 1112) but IGMP version 1 is still in wide use. If you would like to read more detailed information about interoperability between IGMP version 2 and version 1, please see sections 4 and 5 of RFC 2236.
Apply	Click **Apply** to save your changes back to the Vantage CNM.
Reset	Click **Reset** to begin configuring this screen afresh.

5.3.2.3 PPTP Encapsulation

Point-to-Point Tunneling Protocol (PPTP) is a network protocol that enables secure transfer of data from a remote client to a private server, creating a Virtual Private Network (VPN) using TCP/IP-based networks.

PPTP supports on-demand, multi-protocol and virtual private networking over public networks, such as the Internet.

Figure 39 Device Operation > Device Configuration > Network > WAN > WAN1/2 - PPTP (ZyNOS ZyWALL with two WAN ports)



The following table describes the labels in this screen.

Table 23 Device Operation > Device Configuration > Network > WAN > WAN1/2 - PPTP (ZyNOS ZyWALL with two WAN ports)

LABEL	DESCRIPTION
WAN: ISP	
Encapsulation	Point-to-Point Tunneling Protocol (PPTP) is a network protocol that enables secure transfer of data from a remote client to a private server, creating a Virtual Private Network (VPN) using TCP/IP-based networks. PPTP supports on-demand, multi-protocol, and virtual private networking over public networks, such as the Internet. The device supports only one PPTP server connection at any given time. To configure a PPTP client, you must configure the **User Name** and **Password** fields for a PPP connection and the PPTP parameters for a PPTP connection.

Table 23 Device Operation > Device Configuration > Network > WAN > WAN1/2 - PPTP (ZyNOS ZyWALL with two WAN ports) (continued)

LABEL	DESCRIPTION
PPTP	
User Name	Type the user name given to you by your ISP.
Password	Type the password associated with the user name above.
Retype to confirm Password	Type your password again to make sure that you have entered is correctly.
Nailed-up Connection	Select this if you do not want the connection to time out.
Idle Timeout	This value specifies the time in seconds that elapses before the device automatically disconnects from the PPTP server.
My IP Address	Type the (static) IP address assigned to you by your ISP.
My IP Subnet Mask	Type the subnet mask assigned to you by your ISP.
Server IP Address	Type the IP address of the PPTP server.
Connection ID/ Name	Type your identification name for the PPTP server.
Authentication Type	Use the drop-down list box to select an authentication protocol for outgoing calls. Options are: **CHAP/PAP** - Your device accepts either CHAP or PAP when requested by this remote node. **CHAP** - Your device accepts CHAP only. **PAP** - Your device accepts PAP only.
WAN IP Address Assignment	
Get automatically from ISP	Select this option If your ISP did not assign you a fixed IP address. This is the default selection.
Use fixed IP address	Select this option If the ISP assigned a fixed IP address.
My WAN IP Address	Enter your WAN IP address in this field if you selected **Use Fixed IP Address**.
Private	This parameter determines if the device will include this route to a remote node in its RIP broadcasts. Select this check box to keep this route private and not included in RIP broadcasts. Clear this check box to propagate this route to other hosts through RIP broadcasts.
Advanced Setup	
RIP Direction	RIP (Routing Information Protocol) allows a router to exchange routing information with other routers. The **RIP Direction** field controls the sending and receiving of RIP packets. Choose **Both**, **None**, **In Only** or **Out Only**. When set to **Both** or **Out Only**, the device will broadcast its routing table periodically. When set to **Both** or **In Only**, the device will incorporate RIP information that it receives. When set to **None**, the device will not send any RIP packets and will ignore any RIP packets received. By default, **RIP Direction** is set to **Both**.

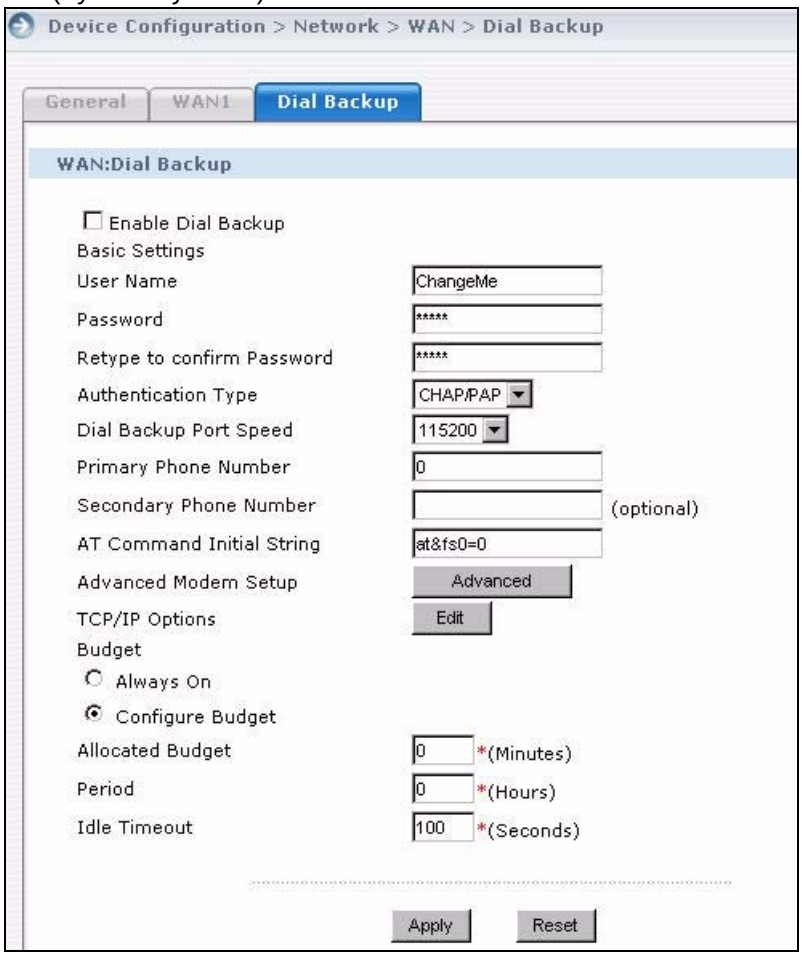
Table 23 Device Operation > Device Configuration > Network > WAN > WAN1/2 - PPTP (ZyNOS ZyWALL with two WAN ports) (continued)

LABEL	DESCRIPTION
RIP Version	The **RIP Version** field controls the format and the broadcasting method of the RIP packets that the device sends (it recognizes both formats when receiving). Choose **RIP-1**, **RIP-2B** or **RIP-2M**. **RIP-1** is universally supported; but **RIP-2** carries more information. RIP-1 is probably adequate for most networks, unless you have an unusual network topology. Both **RIP-2B** and **RIP-2M** sends the routing data in RIP-2 format; the difference being that RIP-2B uses subnet broadcasting while RIP-2M uses multicasting. Multicasting can reduce the load on non-router machines since they generally do not listen to the RIP multicast address and so will not receive the RIP packets. However, if one router uses multicasting, then all routers on your network must use multicasting, also. By default, the **RIP Version** field is set to **RIP-1**.
Multicast	Choose **None** (default), **IGMP-V1** or **IGMP-V2**. IGMP (Internet Group Multicast Protocol) is a network-layer protocol used to establish membership in a Multicast group – it is not used to carry user data. IGMP version 2 (RFC 2236) is an improvement over version 1 (RFC 1112) but IGMP version 1 is still in wide use. If you would like to read more detailed information about interoperability between IGMP version 2 and version 1, please see sections 4 and 5 of RFC 2236.
Apply	Click **Apply** to save your changes back to the Vantage CNM.
Reset	Click **Reset** to begin configuring this screen afresh.

5.3.3 Dial Backup (ZyNOS ZyWALL)

Vantage CNM can communicate with the device using Dial Backup if the main WAN connection goes down. Use this screen to configure Dial Backup on the device.

Figure 40 Device Operation > Device Configuration > Network > WAN > Dial Backup (ZyNOS ZyWALL)



The following table describes the labels in this screen.

Table 24 Device Operation > Device Configuration > Network > WAN > Dial Backup (ZyNOS ZyWALL)

LABEL	DESCRIPTION
Enable Dial Backup	Select this check box to turn on dial backup.
Basic Settings	
User Name	Type the user name assigned by your ISP.
Password	Type the password assigned by your ISP.
Retype to confirm Password	Type your password again to make sure that you have entered it correctly.
Authentication Type	Use the drop-down list box to select an authentication protocol for outgoing calls. Options are: **CHAP/PAP** - The device accepts either CHAP or PAP when requested by this remote node. **CHAP** - The device accepts CHAP only. **PAP** - The device accept PAP only.
Dial Backup Port Speed	Use the drop-down list box to select the speed of the connection between the Dial Backup port and the external device. Available speeds are: 9600, 19200, 38400, 57600, 115200 or 230400 bps.

Table 24 Device Operation > Device Configuration > Network > WAN > Dial Backup (ZyNOS ZyWALL) (continued)

LABEL	DESCRIPTION
Primary/Secondary Phone Number	Type the first (primary) phone number from the ISP for this remote node. If the Primary Phone number is busy or does not answer, the device dials the Secondary Phone number if available. Some areas require dialing the pound sign # before the phone number for local calls. Include a # symbol at the beginning of the phone numbers as required.
AT Command Initial String	Type the AT command string to initialize the WAN device. Consult the manual of your WAN device connected to your Dial Backup port for specific AT commands.
Advanced Modem Setup	Click **Advanced** to display the **WAN:Advanced Modem Setup** screen and edit the details of your dial backup setup.
TCP/IP Options	Click **Edit** to display the **WAN:Dial Backup TCP/IP Options** screen.
Budget	Select **Always On** to have the dial backup connection on all of the time. Select **Configure Budget** to have the dial backup connection on during the time that you select.
Allocated Budget	Type the amount of time (in minutes) that the dial backup connection can be used during the time configured in the **Period** field. Set an amount that is less than the time period configured in the **Period** field.
Period	Type the time period (in hours) for how often the budget should be reset. For example, to allow calls to this remote node for a maximum of 10 minutes every hour, set the **Allocated Budget** to 10 (minutes) and the **Period** to 1 (hour).
Idle Timeout	Type the number of seconds of idle time (when there is no traffic from the device to the remote node) for the device to wait before it automatically disconnects the dial backup connection. This option applies only when the device initiates the call. The dial backup connection never times out if you set this field to "0" (it is the same as selecting **Always On**).
Apply	Click **Apply** to save your changes back to the device.
Reset	Click **Reset** to begin configuring this screen afresh.

5.3.4 Advanced Modem Setup (ZyNOS ZyWALL)

5.3.4.1 AT Command Strings

For regular telephone lines, the default Dial string tells the modem that the line uses tone dialing. ATDT is the command for a switch that requires tone dialing. If your switch requires pulse dialing, change the string to ATDP.

For ISDN lines, there are many more protocols and operational modes. Please consult the documentation of your TA. You may need additional commands in both Dial and Init strings.

5.3.4.1.1 DTR Signal

The majority of WAN devices default to hanging up the current call when the DTR (Data Terminal Ready) signal is dropped by the DTE. When the Drop DTR When Hang Up check box is selected, the device uses this hardware signal to force the WAN device to hang up, in addition to issuing the drop command ATH.

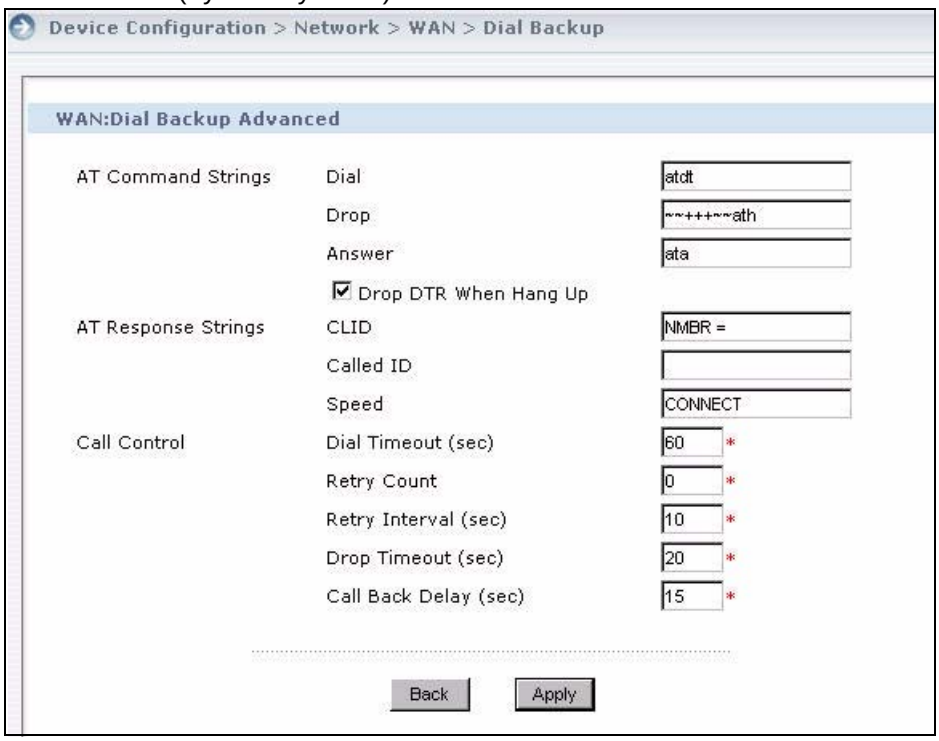
5.3.4.1.2 Response Strings

The response strings tell the device the tags, or labels, immediately preceding the various call parameters sent from the WAN device. The response strings have not been standardized; please consult the documentation of your WAN device to find the correct tags.

Click the **Advanced** button in the **Advanced Modem Setup** in the **Dial Backup** screen to display the **Dial Backup Advanced** screen shown next.

Consult the manual of your WAN device connected to your dial backup port for specific AT commands.

Figure 41 Device Operation > Device Configuration > Network > WAN > Dial Backup > Advanced (ZyNOS ZyWALL)



The following table describes the labels in this screen.

Table 25 Device Operation > Device Configuration > Network > WAN > Dial Backup > Advanced (ZyNOS ZyWALL)

LABEL	DESCRIPTION	EXAMPLE
AT Command Strings		
Dial	Type the AT Command string to make a call.	atdt
Drop	Type the AT Command string to drop a call. "~" represents a one second wait, for example, "~~~+++~~ath" can be used if your modem has a slow response time.	~~+++~~ath
Answer	Type the AT Command string to answer a call.	ata

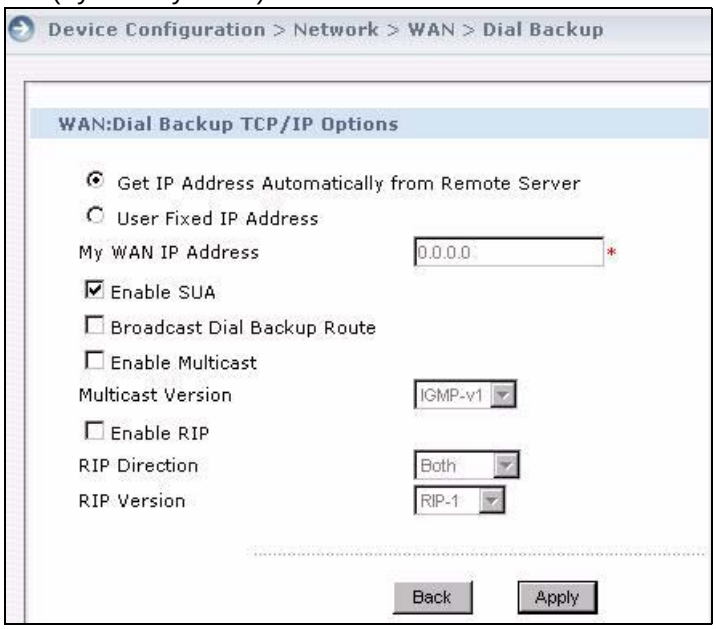
Table 25 Device Operation > Device Configuration > Network > WAN > Dial Backup > Advanced (ZyNOS ZyWALL) (continued)

LABEL	DESCRIPTION	EXAMPLE
Drop DTR When Hang Up	Select this check box to have the device drop the DTR (Data Terminal Ready) signal after the "AT Command String: Drop" is sent out.	
AT Response Strings		
CLID	Type the keyword that precedes the CLID (Calling Line Identification) in the AT response string. This lets the device capture the CLID in the AT response string that comes from the WAN device. CLID is required for CLID authentication.	NMBR
Called ID	Type the keyword preceding the dialed number.	
Speed	Type the keyword preceding the connection speed.	CONNECT
Call Control		
Dial Timeout (sec)	Type a number of seconds for the device to try to set up an outgoing call before timing out (stopping).	60
Retry Count	Type a number of times for the device to retry a busy or no-answer phone number before blacklisting the number.	0
Retry Interval (sec)	Type a number of seconds for the device to wait before trying another call after a call has failed. This applies before a phone number is blacklisted.	10
Drop Timeout (sec)	Type the number of seconds for the device to wait before dropping the DTR signal if it does not receive a positive disconnect confirmation.	20
Call Back Delay (sec)	Type a number of seconds for the device to wait between dropping a callback request call and dialing the corresponding callback call.	15
Back	Click **Back** to return to the previous screen.	
Apply	Click **Apply** to save your changes back to the device.	

5.3.5 Edit Dial Backup (ZyNOS ZyWALL)

Click **Edit** in the **TCP/IP Options** field in the screen shown in Figure 40 on page 86 to display the next screen.

Figure 42 Device Operation > Device Configuration > Network > WAN > Dial Backup > Edit (ZyNOS ZyWALL)



The following table describes the fields in this screen.

Table 26 Device Operation > Device Configuration > Network > WAN > Dial Backup > Edit – ZyNOS ZyWALL

LABEL	DESCRIPTION
Get IP Address Automatically from Remote Server	Type the login name assigned by your ISP for this remote node.
Use Fixed IP Address	Select this check box if your ISP assigned you a fixed IP address, and then enter the IP address in the following field.
My WAN IP Address	Leave the field set to 0.0.0.0 (default) to have the ISP or other remote router dynamically (automatically) assign your WAN IP address if you do not know it. Type your WAN IP address here if you know it (static). This is the address assigned to your local device, not the remote router.
Enable SUA	Network Address Translation (NAT) allows the translation of an Internet protocol address used within one network to a different IP address known within another network. **SUA** (Single User Account) is a subset of NAT that supports two types of mapping: Many-to-One and Server. When you select this option the device will use Address Mapping Set 255 in the SMT (see the section on menu 15.1 for more information). Select the check box to enable SUA. Clear the check box to disable SUA so the device does not perform any NAT mapping for the dial backup connection.
Broadcast Dial Backup Route	Select this check box to forward the backup route broadcasts to the WAN.
Enable Multicast	Select this check box to turn on IGMP (Internet Group Multicast Protocol). IGMP is a network-layer protocol used to establish membership in a Multicast group - it is not used to carry user data.
Multicast Version	Select **IGMP-v1** or **IGMP-v2**. IGMP version 2 (RFC 2236) is an improvement over version 1 (RFC 1112) but IGMP version 1 is still in wide use. If you would like to read more detailed information about inter operability between IGMP version 2 and version 1, please see *sections 4* and *5* of *RFC 2236*.

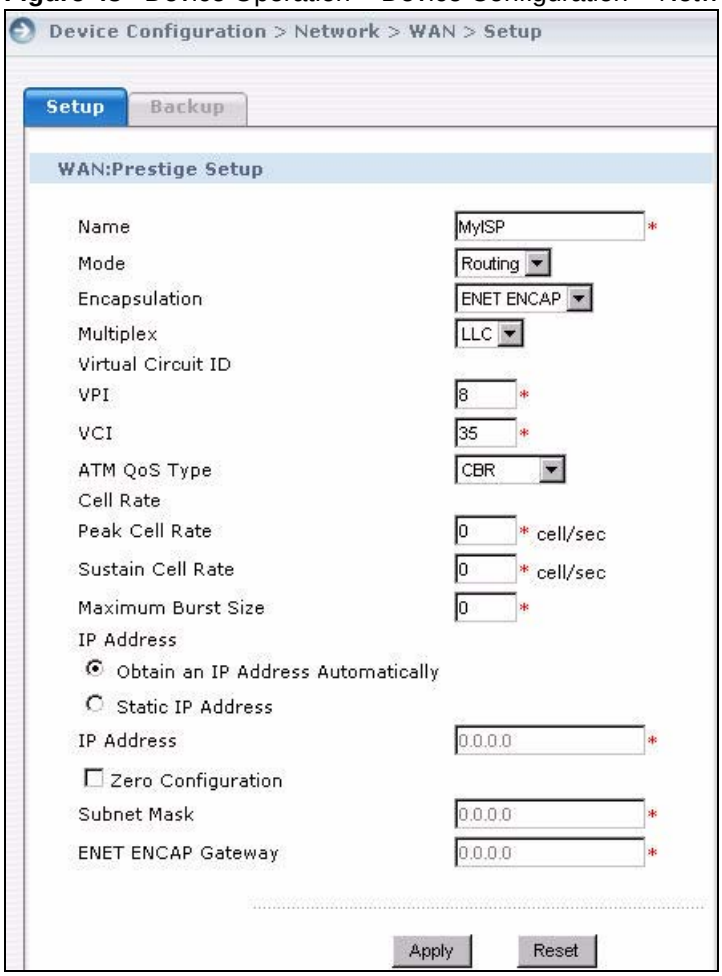
Table 26 Device Operation > Device Configuration > Network > WAN > Dial Backup > Edit – ZyNOS ZyWALL (continued)

LABEL	DESCRIPTION
Enable RIP	Select this check box to turn on RIP (Routing Information Protocol), which allows a router to exchange routing information with other routers.
RIP Direction	RIP (Routing Information Protocol, RFC1058 and RFC 1389) allows a router to exchange routing information with other routers. The **RIP Direction** field controls the sending and receiving of RIP packets. Select the RIP direction from **Both**/**In Only**/**Out Only**/**None**. When set to **Both** or **Out Only**, the device broadcasts its routing table periodically. When set to **Both** or **In Only**, it incorporates the RIP information that it receives; when set to **None**, it does not send any RIP packets and ignores any RIP packets received. **Both** is the default.
RIP Version	The **RIP Version** field controls the format and the broadcasting method of the RIP packets that the device sends (it recognizes both formats when receiving). **RIP-1** is universally supported but RIP-2 carries more information. **RIP-1** is probably adequate for most networks, unless you have an unusual network topology. Both **RIP-2B** and **RIP-2M** sends the routing data in RIP-2 format; the difference being that **RIP-2B** uses subnet broadcasting while **RIP-2M** uses multicasting. Multicasting can reduce the load on non-router machines since they generally do not listen to the RIP multicast address and so will not receive the RIP packets. However, if one router uses multicasting, then all routers on your network must use multicasting, also. By default, RIP direction is set to **Both** and the **Version** set to **RIP-1**.
Apply	Click **Apply** to save your changes back to the device.
Reset	Click **Reset** to begin configuring this screen afresh.

5.3.6 WAN Setup (Prestige)

The fields in this screen vary depending on the mode and encapsulation. Select a device in the object tree and then select **Device Operation** > **Device Configuration** > **Network** > **WAN**.

Figure 43 Device Operation > Device Configuration > Network > WAN > Setup (Prestige)



The following table describes the fields in this screen.

Table 27 Device Operation > Device Configuration > Network > WAN > Setup (Prestige)

LABEL	DESCRIPTION
Name	Enter the name of your Internet Service Provider, for example, MyISP. This information is for identification purposes only.
Mode	Select **Routing** from the drop-down list box if your ISP allows multiple computers to share an Internet account. Otherwise select **Bridge**.
Encapsulation	Select the method of encapsulation used by your ISP from the drop-down list box. Choices vary depending on the mode you select in the **Mode** field. If you select **Bridge** in the **Mode** field, select either **PPPoA** or **RFC 1483**. If you select **Routing** in the **Mode** field, select **PPPoA**, **RFC 1483**, **ENET ENCAP** or **PPPoE**.
Multiplex	Select the method of multiplexing used by your ISP from the drop-down list. Choices are **VC** or **LLC**.
Virtual Circuit ID	VPI (Virtual Path Identifier) and VCI (Virtual Channel Identifier) define a virtual circuit. Refer to the appendix for more information.
VPI	The valid range for the VPI is 0 to 255. Enter the VPI assigned to you.
VCI	The valid range for the VCI is 32 to 65535 (0 to 31 is reserved for local management of ATM traffic). Enter the VCI assigned to you.

Table 27 Device Operation > Device Configuration > Network > WAN > Setup (Prestige)

LABEL	DESCRIPTION
ATM QoS Type	Select **CBR** (Constant Bit Rate) to specify fixed (always-on) bandwidth for voice or data traffic. Select **UBR** (Unspecified Bit Rate) for applications that are non-time sensitive, such as e-mail. Select **VBR** (Variable Bit Rate) for bursty traffic and bandwidth sharing with other applications.
Cell Rate	Cell rate configuration often helps eliminate traffic congestion that slows transmission of real time data such as audio and video connections.
Peak Cell Rate	Divide the DSL line rate (bps) by 424 (the size of an ATM cell) to find the Peak Cell Rate (PCR). This is the maximum rate at which the sender can send cells. Type the PCR here.
Sustain Cell Rate	The Sustain Cell Rate (SCR) sets the average cell rate (long-term) that can be transmitted. Type the SCR, which must be less than the PCR. Note that system default is 0 cells/sec.
Maximum Burst Size	Maximum Burst Size (MBS) refers to the maximum number of cells that can be sent at the peak rate. Type the MBS, which is less than 65535.
Login Information	(PPPoA and PPPoE encapsulation only)
Service Name (Appears when you use PPPoE encapsulation)	This field is only available when **PPPoE** encapsulation is selected. Type the **PPPoE** service name provided to you. **PPPoE** uses a service name to identify and reach the **PPPoE** server.
PPPoE + PPPoE_Client_PC (Appears when you use PPPoE encapsulation)	This field is only available when **PPPoE** encapsulation is selected. Select the check box to enable PPPoE pass through. In addition to the device's built-in PPPoE client, you can enable PPPoE pass through to allow up to ten hosts on the LAN to use PPPoE client software on their computers to connect to the ISP via the device. Each host can have a separate account and a public WAN IP address. PPPoE pass through is an alternative to NAT for application where NAT is not appropriate. Disable PPPoE pass through if you do not need to allow hosts on the LAN to use PPPoE client software on their computers to connect to the ISP.
User Name	Enter the user name exactly as your ISP assigned. If assigned a name in the form user@domain where domain identifies a service name, then enter both components exactly as given.
Password	Enter the password associated with the user name above.
IP Address	This option is available if you select **Routing** in the **Mode** field. A static IP address is a fixed IP that your ISP gives you. A dynamic IP address is not fixed; the ISP assigns you a different one each time you connect to the Internet. The Single User Account feature can be used with either a dynamic or static IP address. Select **Obtain an IP Address Automatically** if you have a dynamic IP address; otherwise select **Static IP Address** and type your ISP assigned IP address in the **IP Address** field below.
Connection (Appears when you use PPPoA and PPPoE encapsulation)	The schedule rule(s) in SMT menu 26 have priority over your **Connection** settings.
Nailed-Up Connection (Appears when you use PPPoA and PPPoE encapsulation)	Select **Nailed-Up Connection** when you want your connection up all the time. The device will try to bring up the connection automatically if it is disconnected.
Connect on Demand (Appears when you use PPPoA and PPPoE encapsulation)	Select **Connect on Demand** when you don't want the connection up all the time and specify an idle time-out in the **Max Idle Timeout** field.

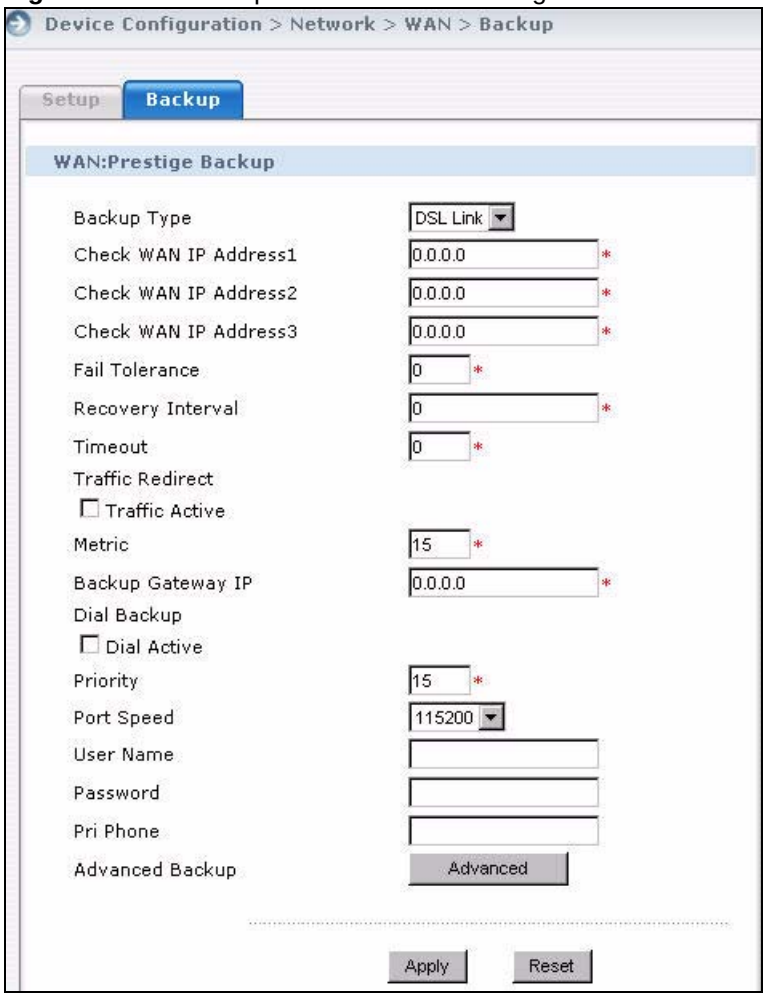
Table 27 Device Operation > Device Configuration > Network > WAN > Setup (Prestige)

LABEL	DESCRIPTION
Max Idle Timeout (Appears when you use PPPoA and PPPoE encapsulation)	Specify an idle time-out in the **Max Idle Timeout** field when you select **Connect on Demand**. The default setting is 0, which means the Internet session will not timeout.
Zero Configuration	Select this if you want the device to automatically try to configure the Internet connection. See the device's User's Guide for more information.
Subnet Mask (Appears when you use ENET ENCAP encapsulation)	Enter the subnet mask provided by your ISP.
ENET ENCAP Gateway (Appears when you use ENET ENCAP encapsulation)	Enter the IP address of the gateway provided by your ISP.
Apply	Click **Apply** to save the changes.
Reset	Click **Reset** to begin configuring this screen afresh.

5.3.7 WAN Backup (Prestige)

To change your device's WAN backup settings, click **WAN** > **Backup**. The screen appears as shown.

Figure 44 Device Operation > Device Configuration > Network > WAN > Backup (Prestige)



The following table describes the fields in this screen.

Table 28 Device Operation > Device Configuration > Network > WAN > Backup (Prestige)

LABEL	DESCRIPTION
Backup Type	Select the method that the device uses to check the DSL connection. Select **DSL Link** to have the device check if the connection to the DSLAM is up. Select **ICMP** to have the device periodically ping the IP addresses configured in the **Check WAN IP Address** type fields.
Check WAN IP Address1-3	Configure this field to test your device's WAN accessibility. Type the IP address of a reliable nearby computer (for example, your ISP's DNS server address). If you activate either traffic redirect or dial backup, you must configure at least one IP address here. When using a WAN backup connection, the device periodically pings the addresses configured here and uses the other WAN backup connection (if configured) if there is no response.
Fail Tolerance	Type the number of times (2 recommended) that your device may ping the IP addresses configured in the **Check WAN IP Address** field without getting a response before switching to a WAN backup connection (or a different WAN backup connection).

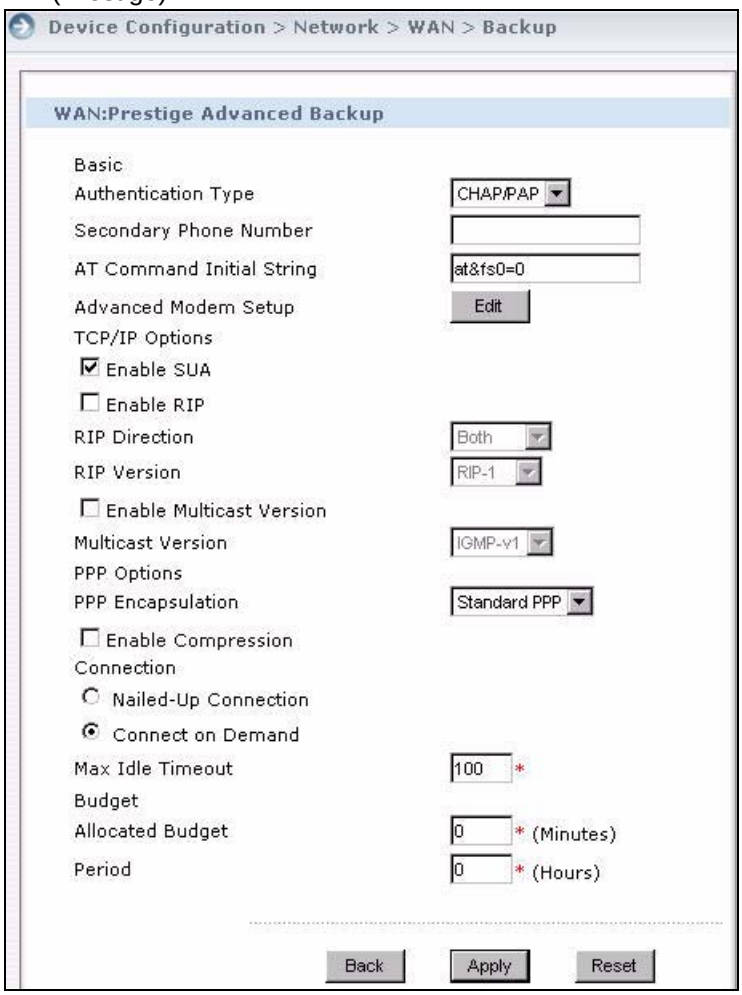
Table 28 Device Operation > Device Configuration > Network > WAN > Backup (Prestige)

LABEL	DESCRIPTION
Recovery Interval	When the device is using a lower priority connection (usually a WAN backup connection), it periodically checks to whether or not it can use a higher priority connection. Type the number of seconds (30 recommended) for the device to wait between checks. Allow more time if your destination IP address handles lots of traffic.
Timeout	Type the number of seconds (3 recommended) for your device to wait for a ping response from one of the IP addresses in the **Check WAN IP Address** field before timing out the request. The WAN connection is considered "down" after the device times out the number of times specified in the **Fail Tolerance** field. Use a higher value in this field if your network is busy or congested.
Traffic Redirect	
Traffic Active	Select this check box to have the device use traffic redirect if the normal WAN connection goes down. If you activate traffic redirect, you must configure at least one Check WAN IP Address.
Metric	This field sets this route's priority among the routes the device uses. The metric represents the "cost of transmission". A router determines the best route for transmission by choosing a path with the lowest "cost". RIP routing uses hop count as the measurement of cost, with a minimum of "1" for directly connected networks. The number must be between "1" and "15"; a number greater than "15" means the link is down. The smaller the number, the lower the "cost".
Backup Gateway IP	Type the IP address of your backup gateway in dotted decimal notation. The device automatically forwards traffic to this IP address if the device's Internet connection terminates.
Dial Backup	
Dial Active	Select this check box to turn on dial backup. If you activate dial backup, you must configure at least one Check WAN IP Address.
Priority	This field sets this route's priority among the three routes the device uses (normal, traffic redirect and dial backup). Type a number (1 to 15) to set the priority of the dial backup route for data transmission. The smaller the number, the higher the priority. If the three routes have the same metrics, the priority of the routes is as follows: **WAN**, **Traffic Redirect**, **Dial Backup**.
Port Speed	Use the drop-down list box to select the speed of the connection between the dial backup port and the external device. Available speeds are: **9600**, **19200**, **38400**, **57600**, **115200** or **230400** bps.
User Name	Type the login name assigned by your ISP.
Password	Type the password assigned by your ISP.
Pri Phone	Type the first (primary) phone number from the ISP for this remote node. Some areas require dialing the pound sign # before the phone number for local calls. Include a # symbol at the beginning of the phone numbers as required.
Advanced Backup	Click this button to display the **WAN:Prestige Advanced Backup** screen and edit more details of your WAN backup setup.
Apply	Click **Apply** to save the changes.
Reset	Click **Reset** to begin configuring this screen afresh.

5.3.8 Advanced WAN Backup (Prestige)

Use this screen to edit your device's advanced WAN backup settings. To open this screen, click **WAN** > **Backup** and the **Advanced** button.

Figure 45 Device Operation > Device Configuration > Network > WAN > Backup > Advanced (Prestige)



The following table describes the fields in this screen.

Table 29 Device Operation > Device Configuration > Network > WAN Backup > Advanced (Prestige)

LABEL	DESCRIPTION
Basic	
Authentication Type	Use the drop-down list box to select an authentication protocol for outgoing calls. Options are: **CHAP/PAP** - Your device accepts either CHAP or PAP when requested by this remote node. **CHAP** - Your device accepts CHAP only. **PAP** - Your device accept PAP only.

Table 29 Device Operation > Device Configuration > Network > WAN Backup > Advanced (Prestige) (continued)

LABEL	DESCRIPTION
Primary/ Secondary Phone Number	Type the first (primary) phone number from the ISP for this remote node. If the primary phone number is busy or does not answer, your device dials the secondary phone number if available. Some areas require dialing the pound sign # before the phone number for local calls. Include a # symbol at the beginning of the phone numbers as required.
AT Command Initial String	Type the AT command string to initialize the WAN device. Consult the manual of your WAN device connected to your dial backup port for specific AT commands.
Advanced Modem Setup	Click the **Edit** button to display the **Advanced Modem Setup** screen and edit the details of your dial backup setup.
TCP/IP Options	
Enable SUA	Network Address Translation (NAT) allows the translation of an Internet protocol address used within one network to a different IP address known within another network. SUA (Single User Account) is a subset of NAT that supports two types of mapping: Many-to-One and Server. When you select this option the device will use Address Mapping Set 255 in the SMT.
Enable RIP	Select this check box to turn on RIP (Routing Information Protocol), which allows a router to exchange routing information with other routers.
RIP Direction	RIP (Routing Information Protocol) allows a router to exchange routing information with other routers. The **RIP Direction** field controls the sending and receiving of RIP packets. Choose **Both**, **In Only** or **Out Only**. When set to **Both** or **Out Only**, the device will broadcast its routing table periodically. When set to **Both** or **In Only**, the device will incorporate RIP information that it receives.
RIP Version	The **RIP Version** field controls the format and the broadcasting method of the RIP packets that the device sends (it recognizes both formats when receiving). Choose **RIP-1**, **RIP-2B** or **RIP-2M**. **RIP-1** is universally supported; but **RIP-2** carries more information. RIP-1 is probably adequate for most networks, unless you have an unusual network topology. Both **RIP-2B** and **RIP-2M** sends the routing data in RIP-2 format; the difference being that RIP-2B uses subnet broadcasting while RIP-2M uses multicasting. Multicasting can reduce the load on non-router machines since they generally do not listen to the RIP multicast address and so will not receive the RIP packets. However, if one router uses multicasting, then all routers on your network must use multicasting, also.
Enable Multicast Version	Select this check box to turn on IGMP (Internet Group Multicast Protocol). IGMP is a network-layer protocol used to establish membership in a Multicast group - it is not used to carry user data.
Multicast Version	Select **IGMP-v1** or **IGMP-v2**. IGMP version 2 (RFC 2236) is an improvement over version 1 (RFC 1112) but IGMP version 1 is still in wide use. If you would like to read more detailed information about inter operability between IGMP version 2 and version 1, please see *sections 4* and *5* of *RFC 2236*.
PPP Options	
PPP Encapsulation	Select **CISCO PPP** from the drop-down list box if your backup WAN device uses **Cisco PPP** encapsulation; otherwise select **Standard PPP**.
Enable Compression	Select this check box to enable stac compression.
Connection	

Table 29 Device Operation > Device Configuration > Network > WAN Backup > Advanced (Prestige) (continued)

LABEL	DESCRIPTION
Nailed-Up Connection	Select **Nailed-Up Connection** when you want your connection up all the time. The device will try to bring up the connection automatically if it is disconnected.
Connect on Demand	Select **Connect on Demand** when you don't want the connection up all the time and specify an idle time-out in the **Max Idle Timeout** field.
Max Idle Timeout	Specify an idle time-out in the **Max Idle Timeout** field when you select **Connect on Demand**. The default setting is 0, which means the Internet session will not timeout.
Budget	The configuration in the **Budget** fields has priority over your **Connection** settings.
Allocated Budget	Type the amount of time (in minutes) that the dial backup connection can be used during the time configured in the **Period** field. Set an amount that is less than the time period configured in the **Period** field. If you set the **Allocated Budget** to 0, you will not be able to use the dial backup connection.
Period	Type the time period (in hours) for how often the budget should be reset. For example, to allow calls to this remote node for a maximum of 10 minutes every hour, set the **Allocated Budget** to 10 (minutes) and the **Period** to 1 (hour). If you set the **Period** to 0, there is no budget control and the device uses the **Connection** settings.
Back	Click **Back** to return to the previous screen.
Apply	Click **Apply** to save the changes.
Reset	Click **Reset** to begin configuring this screen afresh.

5.3.9 Advanced Modem Setup (Prestige)

Click **Edit** in the **Advanced Modem Setup** field. See the section on ZyWALL advanced modem setup on page 87 for configuration of this screen.

5.4 Wireless Card

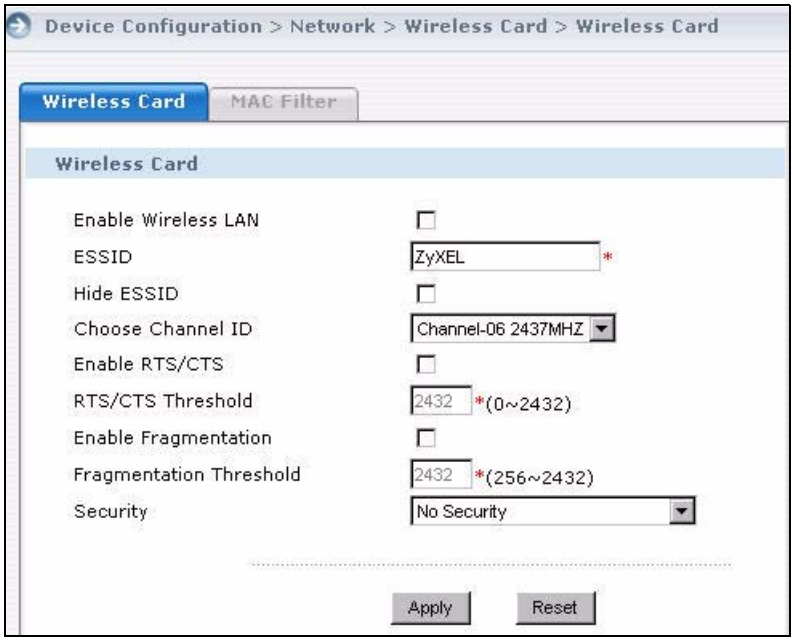
This section shows you how to configure the **Wireless Card** screens. These screens may vary depending on which model you're configuring. Please see the device's User's Guide for more information about any of these screens or fields.

5.4.1 Wireless and Wireless Security Settings

This screen depends on the device type and firmware version.

Use this screen to configure wireless and wireless security settings. To open this screen, click **Device Operation** > **Device Configuration** > **Network** > **Wireless Card** > **Wireless Card**.

Figure 46 Device Operation > Device Configuration > Network > Wireless Card > Wireless Card



The following table describes the fields in this screen.

Table 30 Device Operation > Device Configuration > Network > Wireless Card > Wireless Card

LABEL	DESCRIPTION
Enable Wireless LAN	You should configure some wireless security when you enable the wireless LAN. Select the check box to enable the wireless LAN.
ESSID	The ESSID (Extended Service Set IDentification) is a unique name to identify the device in the wireless LAN. Wireless stations associating to the device must have the same ESSID. Enter a descriptive name of up to 32 printable characters (including spaces; alphabetic characters are case-sensitive).
Hide ESSID	Select this check box to hide the ESSID in so a station cannot obtain the ESSID through AP scanning. Or don't select this to make the ESSID visible so a station can obtain the ESSID through AP scanning.
Choose Channel ID	The radio frequency used by IEEE 802.11a, b or g wireless devices is called a channel. Select a channel from the drop-down list box.
Enable RTS/ CTS	Select this check box to enable RTS (Request To Send) and CTS (Clear To Send) to reduce data collisions on the wireless network if you have wireless clients that are associated with the same AP but out of range of one another..
RTS/CTS Threshold	The RTS threshold (number of bytes) is for enabling RTS/CTS. Data with its frame size larger than this value will perform the RTS/CTS handshake. A wireless client sends an RTS for all packets larger than the number (of bytes) that you enter here. Set the RTS/CTS equal to or higher than the fragmentation threshold to turn RTS/ CTS off. Select **Enable RTS/CTS** to change the default value and enter a new value between 0 and 2432.
Enable Fragmentation	Select this check box to enable fragmentation on a packet if it is over the frame size defined in the **Fragmentation Threshold** field.

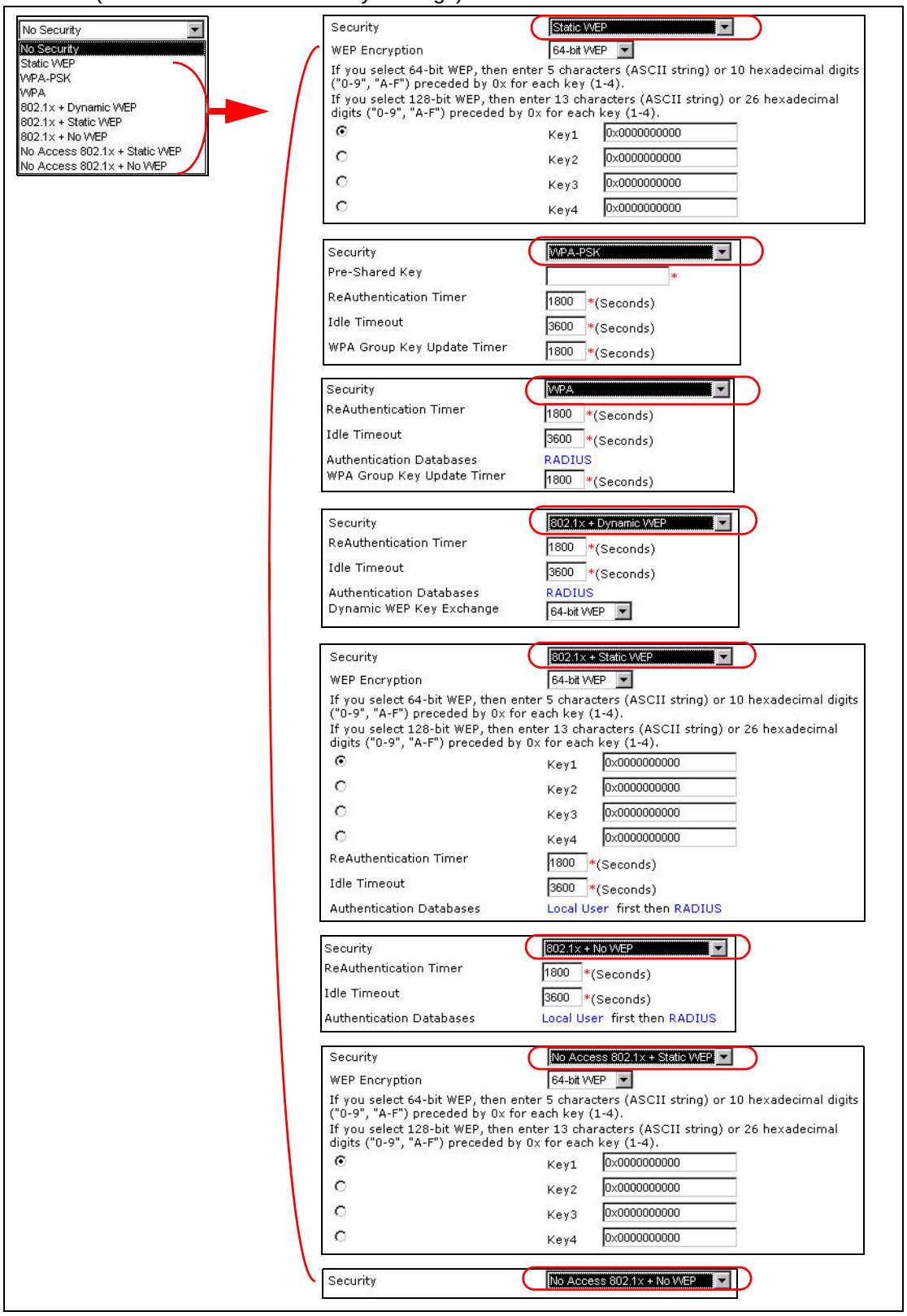
Table 30 Device Operation > Device Configuration > Network > Wireless Card > Wireless Card (continued)

LABEL	DESCRIPTION
Fragmentation Threshold	This is the threshold (number of bytes) for the fragmentation boundary for directed messages. It is the maximum data fragment size that can be sent. Select the check box to change the default value and enter a value between 256 and 2432.
Security	Select one of the security settings. **No Security** **Static WEP** **WPA-PSK** **WPA** **802.1x + Dynamic WEP** **802.1x + Static WEP** **802.1x + No WEP** **No Access 802.1x + Static WEP** **No Access 802.1x + No WEP** Select **No Security** to allow wireless stations to communicate with the access points without any data encryption. Otherwise, select the security you need and see the following sections for more information. Note: The installed ZyXEL wireless card may not support all of the wireless security features you can configure in the Vantage CNM. Please see the product specifications appendix for a table of compatible ZyXEL wireless cards and the wireless security features each card supports.
Apply	Click **Apply** to save your changes back to the device.
Reset	Click **Reset** to begin configuring this screen afresh.

5.4.2 Advanced Wireless Security Settings

Use these screens to configure wireless security settings. To see these settings, select any option from the **Security** field in the **Device Operation** > **Device Configuration** > **Network** > **Wireless Card** > **Wireless Card** screen.

Figure 47 Device Operation > Device Configuration > Network > Wireless Card > Wireless Card (Advanced Wireless Security Settings)



The following table describes the fields in these settings.

Table 31 Wireless Card: Static WEP

LABEL	DESCRIPTION
Security	Select **Static WEP** from the drop-down list.
WEP Encryption	WEP (Wired Equivalent Privacy) provides data encryption to prevent unauthorized wireless stations from accessing data transmitted over the wireless network. Select **64-bit WEP** or **128-bit WEP** to enable data encryption.
Key 1 to Key 4	If you chose **64-bit WEP** in the **WEP Encryption** field, then enter any 5 characters (ASCII string) or 10 hexadecimal characters ("0-9", "A-F") preceded by 0x for each key. If you chose **128-bit WEP** in the **WEP Encryption** field, then enter 13 characters (ASCII string) or 26 hexadecimal characters ("0-9", "A-F") preceded by 0x for each key. There are four data encryption keys to secure your data from eavesdropping by unauthorized wireless users. The values for the keys must be set up exactly the same on the access points as they are on the wireless stations.

Table 32 Wireless Card: WPA-PSK

LABEL	DESCRIPTION
Security	Select **WPA-PSK** from the drop-down list.
Pre-Shared Key	The encryption mechanisms used for **WPA** and **WPA-PSK** are the same. The only difference between the two is that **WPA-PSK** uses a simple common password, instead of user-specific credentials. Type a pre-shared key from 8 to 63 case-sensitive ASCII characters (including spaces and symbols).
ReAuthentication Timer (Seconds)	Specify how often wireless stations have to resend user names and passwords in order to stay connected. Enter a time interval between 10 and 65535 seconds. If wireless station authentication is done using a RADIUS server, the reauthentication timer on the RADIUS server has priority.
Idle Timeout (Seconds)	The Vantage CNM automatically disconnects a wireless station from the wireless network after a period of inactivity. The wireless station needs to send the username and password again before it can use the wireless network again. Some wireless clients may prompt users for a username and password; other clients may use saved login credentials. In either case, there is usually a short delay while the wireless client logs in to the wireless network again. This value is usually smaller when the wireless network is keeping track of how much time each wireless station is connected to the wireless network (for example, using an authentication server). If the wireless network is not keeping track of this information, you can usually set this value higher to reduce the number of delays caused by logging in again.
WPA Group Key Update Timer (Seconds)	The **WPA Group Key Update Timer** is the rate at which the AP (if using **WPA-PSK** key management) or RADIUS server (if using **WPA** key management) sends a new group key out to all clients. The re-keying process is the WPA equivalent of automatically changing the WEP key for an AP and all stations in a WLAN on a periodic basis. Setting of the **WPA Group Key Update Timer** is also supported in **WPA-PSK** mode.

Table 33 Wireless Card: WPA

LABEL	DESCRIPTION
Security	Select **WPA** from the drop-down list.
ReAuthentication Timer (Seconds)	Specify how often wireless stations have to resend user names and passwords in order to stay connected. Enter a time interval between 10 and 65535 seconds. If wireless station authentication is done using a RADIUS server, the reauthentication timer on the RADIUS server has priority.
Idle Timeout (Seconds)	The Vantage CNM automatically disconnects a wireless station from the wireless network after a period of inactivity. The wireless station needs to send the username and password again before it can use the wireless network again. Some wireless clients may prompt users for a username and password; other clients may use saved login credentials. In either case, there is usually a short delay while the wireless client logs in to the wireless network again. This value is usually smaller when the wireless network is keeping track of how much time each wireless station is connected to the wireless network (for example, using an authentication server). If the wireless network is not keeping track of this information, you can usually set this value higher to reduce the number of delays caused by logging in again.
Authentication Databases	Click **RADIUS** to go to the **RADIUS** screen where you can configure the Vantage CNM to check an external RADIUS server.
WPA Group Key Update Timer (Seconds)	The **WPA Group Key Update Timer** is the rate at which the AP (if using **WPA-PSK** key management) or RADIUS server (if using **WPA** key management) sends a new group key out to all clients. The re-keying process is the WPA equivalent of automatically changing the WEP key for an AP and all stations in a WLAN on a periodic basis. Setting of the **WPA Group Key Update Timer** is also supported in **WPA-PSK** mode.

Table 34 Wireless Card: 802.1x + Dynamic WEP

LABEL	DESCRIPTION
Security	Select **802.1x + Dynamic WEP** from the drop-down list.
ReAuthentication Timer (Seconds)	Specify how often wireless stations have to resend user names and passwords in order to stay connected. Enter a time interval between 10 and 65535 seconds. If wireless station authentication is done using a RADIUS server, the reauthentication timer on the RADIUS server has priority.
Idle Timeout (Seconds)	The Vantage CNM automatically disconnects a wireless station from the wireless network after a period of inactivity. The wireless station needs to send the username and password again before it can use the wireless network again. Some wireless clients may prompt users for a username and password; other clients may use saved login credentials. In either case, there is usually a short delay while the wireless client logs in to the wireless network again. This value is usually smaller when the wireless network is keeping track of how much time each wireless station is connected to the wireless network (for example, using an authentication server). If the wireless network is not keeping track of this information, you can usually set this value higher to reduce the number of delays caused by logging in again.
Authentication Databases	Click **RADIUS** to go to the **RADIUS** screen where you can configure the Vantage CNM to check an external RADIUS server.
Dynamic WEP Key Exchange	Select **64-bit WEP** or **128-bit WEP** to enable data encryption.

Table 35 Wireless Card: 802.1x + Static WEP

LABEL	DESCRIPTION
Security	Select **802.1x + Static WEP** from the drop-down list.
WEP Encryption	WEP (Wired Equivalent Privacy) provides data encryption to prevent unauthorized wireless stations from accessing data transmitted over the wireless network. Select **64-bit WEP** or **128-bit WEP** to enable data encryption.
Key 1 to Key 4	If you chose **64-bit WEP** in the **WEP Encryption** field, then enter any 5 characters (ASCII string) or 10 hexadecimal characters ("0-9", "A-F") preceded by 0x for each key. If you chose **128-bit WEP** in the **WEP Encryption** field, then enter 13 characters (ASCII string) or 26 hexadecimal characters ("0-9", "A-F") preceded by 0x for each key. There are four data encryption keys to secure your data from eavesdropping by unauthorized wireless users. The values for the keys must be set up exactly the same on the access points as they are on the wireless stations.
ReAuthentication Timer (Seconds)	Specify how often wireless stations have to resend user names and passwords in order to stay connected. Enter a time interval between 10 and 65535 seconds. If wireless station authentication is done using a RADIUS server, the reauthentication timer on the RADIUS server has priority.
Idle Timeout (Seconds)	The Vantage CNM automatically disconnects a wireless station from the wireless network after a period of inactivity. The wireless station needs to send the username and password again before it can use the wireless network again. Some wireless clients may prompt users for a username and password; other clients may use saved login credentials. In either case, there is usually a short delay while the wireless client logs in to the wireless network again. This value is usually smaller when the wireless network is keeping track of how much time each wireless station is connected to the wireless network (for example, using an authentication server). If the wireless network is not keeping track of this information, you can usually set this value higher to reduce the number of delays caused by logging in again.
Authentication Databases	Click **Local User** to go to the **Local User Database** screen where you can view and/or edit the list of users and passwords. Click **RADIUS** to go to the **RADIUS** screen where you can configure the Vantage CNM to check an external RADIUS server.

Table 36 Wireless Card: 802.1x + No WEP

LABEL	DESCRIPTION
Security	Select **802.1x + No WEP** from the drop-down list.
ReAuthentication Timer (Seconds)	Specify how often wireless stations have to resend user names and passwords in order to stay connected. Enter a time interval between 10 and 65535 seconds. If wireless station authentication is done using a RADIUS server, the reauthentication timer on the RADIUS server has priority.

Table 36 Wireless Card: 802.1x + No WEP (continued)

LABEL	DESCRIPTION
Idle Timeout (Seconds)	The Vantage CNM automatically disconnects a wireless station from the wireless network after a period of inactivity. The wireless station needs to send the username and password again before it can use the wireless network again. Some wireless clients may prompt users for a username and password; other clients may use saved login credentials. In either case, there is usually a short delay while the wireless client logs in to the wireless network again. This value is usually smaller when the wireless network is keeping track of how much time each wireless station is connected to the wireless network (for example, using an authentication server). If the wireless network is not keeping track of this information, you can usually set this value higher to reduce the number of delays caused by logging in again.
Authentication Databases	Click **Local User** to go to the **Local User Database** screen where you can view and/or edit the list of users and passwords. Click **RADIUS** to go to the **RADIUS** screen where you can configure the Vantage CNM to check an external RADIUS server.

Table 37 Wireless Card: No Access 802.1x + Static WEP

LABEL	DESCRIPTION
Security	Select **No Access 802.1x + Static WEP** from the drop-down list.
WEP Encryption	WEP (Wired Equivalent Privacy) provides data encryption to prevent unauthorized wireless stations from accessing data transmitted over the wireless network. Select **64-bit WEP** or **128-bit WEP** to enable data encryption.
Key 1 to Key 4	If you chose **64-bit WEP** in the **WEP Encryption** field, then enter any 5 characters (ASCII string) or 10 hexadecimal characters ("0-9", "A-F") preceded by 0x for each key. If you chose **128-bit WEP** in the **WEP Encryption** field, then enter 13 characters (ASCII string) or 26 hexadecimal characters ("0-9", "A-F") preceded by 0x for each key. There are four data encryption keys to secure your data from eavesdropping by unauthorized wireless users. The values for the keys must be set up exactly the same on the access points as they are on the wireless stations.

Table 38 Wireless Card: No Access 802.1x + No WEP

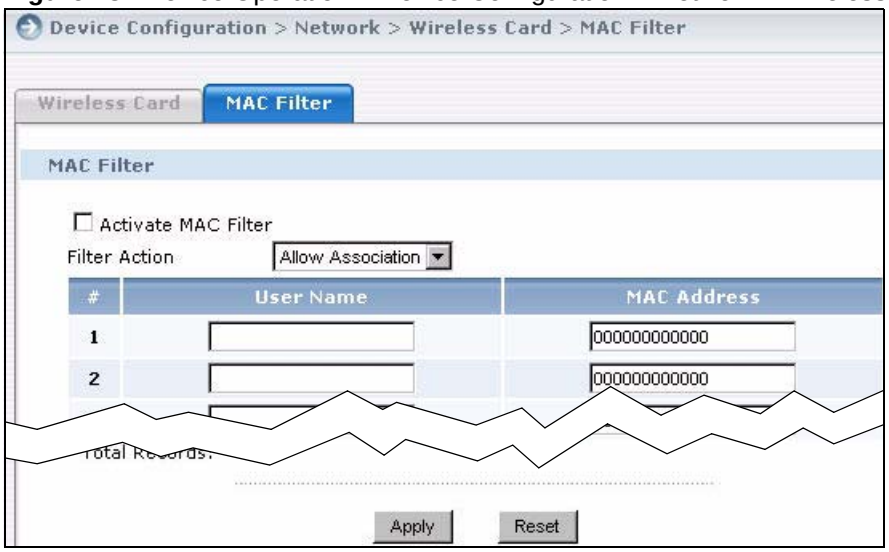
LABEL	DESCRIPTION
Security	Select **No Access 802.1x + No WEP** from the drop-down list to deny all wireless stations access to your wired network and block all wireless stations from communicating with the Vantage CNM.

5.4.3 MAC Filter

Every Ethernet device has a unique MAC (Media Access Control) address. The MAC address is assigned at the factory and consists of six pairs of hexadecimal characters, for example, 00:A0:C5:00:00:02. You need to know the MAC addresses of the devices to configure this screen. To change your device's MAC filter settings, select a device and then click **Device Operation** > **Device Configuration** > **Network** > **Wireless Card** > **MAC Filter**. The screen appears as shown.

Be careful not to list your computer's MAC address and set the **Action** field to **Deny Association** when managing the device via a wireless connection. This would lock you out.

Figure 48 Device Operation > Device Configuration > Network > Wireless Card > MAC Filter



The following table describes the fields in this screen.

Table 39 Device Operation > Device Configuration > Network > Wireless Card > MAC Filter

LABEL	DESCRIPTION
Activate MAC Filter	Select this to enable MAC address filtering.
Filter Action	Define the filter action for the list of MAC addresses in the **MAC Address** table. Select **Deny Association** to block access to the router, MAC addresses not listed will be allowed to access the device. Select **Allow Association** to permit access to the router, MAC addresses not listed will be denied access to the device.
Index	This is the index number of the MAC address.
User Name	Enter a descriptive name for the MAC address.
MAC Address	Enter the MAC addresses in a valid MAC address format, that is, six hexadecimal character pairs, for example, 12:34:56:78:9a:bc of the wireless stations that are allowed or denied access to the device in these address fields.
Apply	Click **Apply** to save your changes back to the device.
Reset	Click **Reset** to begin configuring this screen afresh.

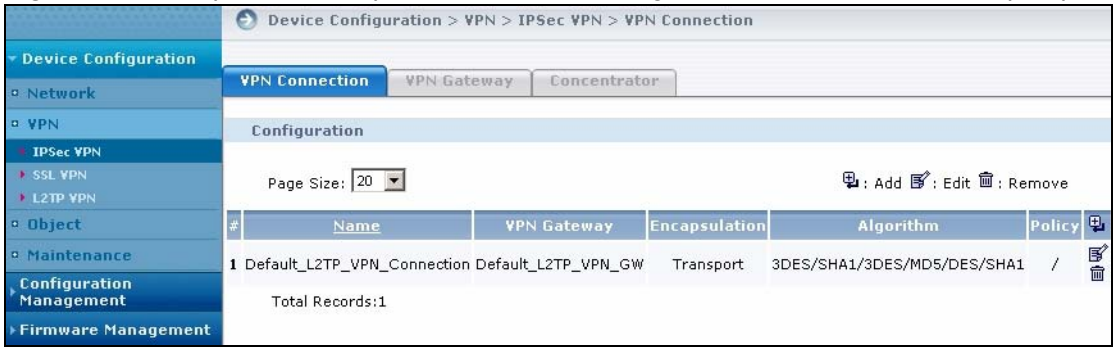
6

Device Security Settings

The screens explained device security settings such as firewall, VPN, anti-virus, anti-spam, IDP, signature update, content filter and X-auth.

The menus and screens may vary for different ZyXEL products. For example, click **Device Operation** in the menu bar and then click **Device Configuration** > **VPN** > **IPSec VPN** in the navigation panel for ZLD-based device's network settings. This document uses the ZyNOS ZyWALL settings for each screen description. For ZLD-based settings, please see device's User's Guide for the detailed information. An example is shown next.

Figure 49 Example: Device Operation > Device Configuration > VPN > IPSec VPN (ZLD)



6.1 Firewall

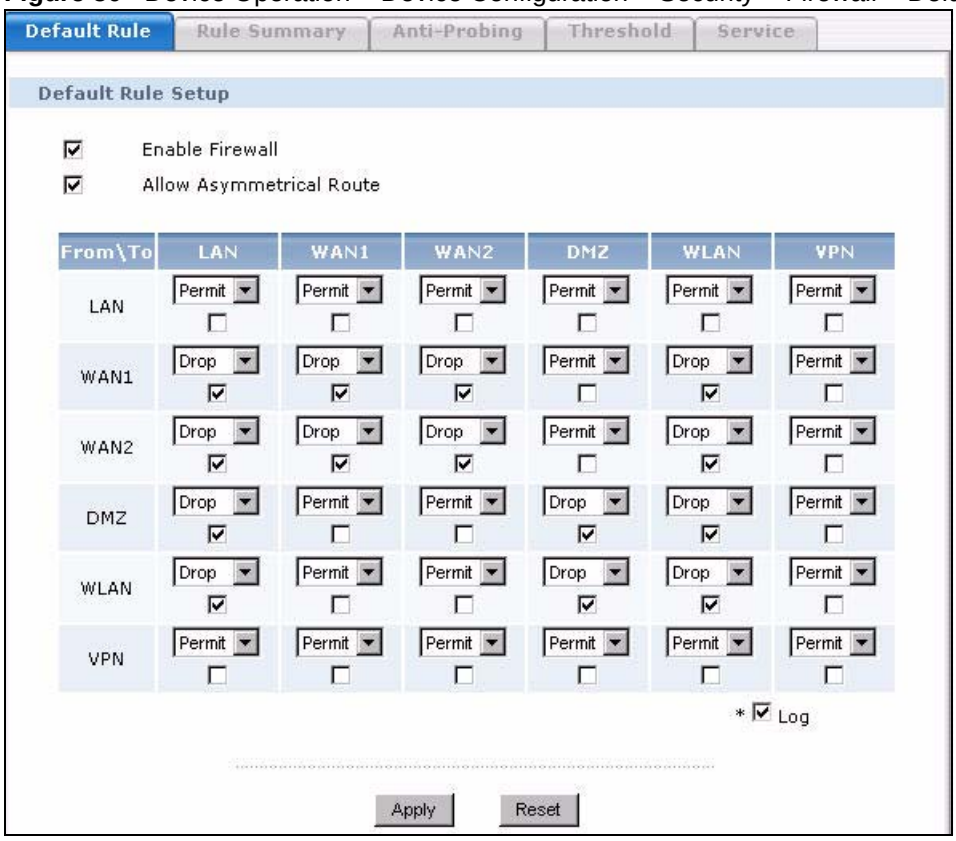
This section shows you how to configure the **Firewall** screens. These screens may vary depending on which model you're configuring. Please see the device's User's Guide for more information about any of these screens or fields.

6.1.1 Default Rule

Use this screen to configure global settings for the firewall and to set the default rules for packets in each direction. You can also configure the default rules in the **Rule Summary** screen for each direction.

To open this screen, click **Device Operation** in the menu bar and then click **Device Configuration** > **Security** > **Firewall** > **Default Rule** in the navigation panel.

Figure 50 Device Operation > Device Configuration > Security > Firewall > Default Rule



The following table describes the labels in this screen.

Table 40 Device Operation > Device Configuration > Security > Firewall > Default Rule

LABEL	DESCRIPTION
Default Rule Setup	
Enable Firewall	Select this check box to activate the firewall. The device performs access control and protects against Denial of Service (DoS) attacks when the firewall is activated.
Allow Asymmetrical Route	Select this check box to have the device firewall ignore the use of triangle route topology on the network. See the device's User's Guide for more on triangle route topology.

Table 40 Device Operation > Device Configuration > Security > Firewall > Default Rule

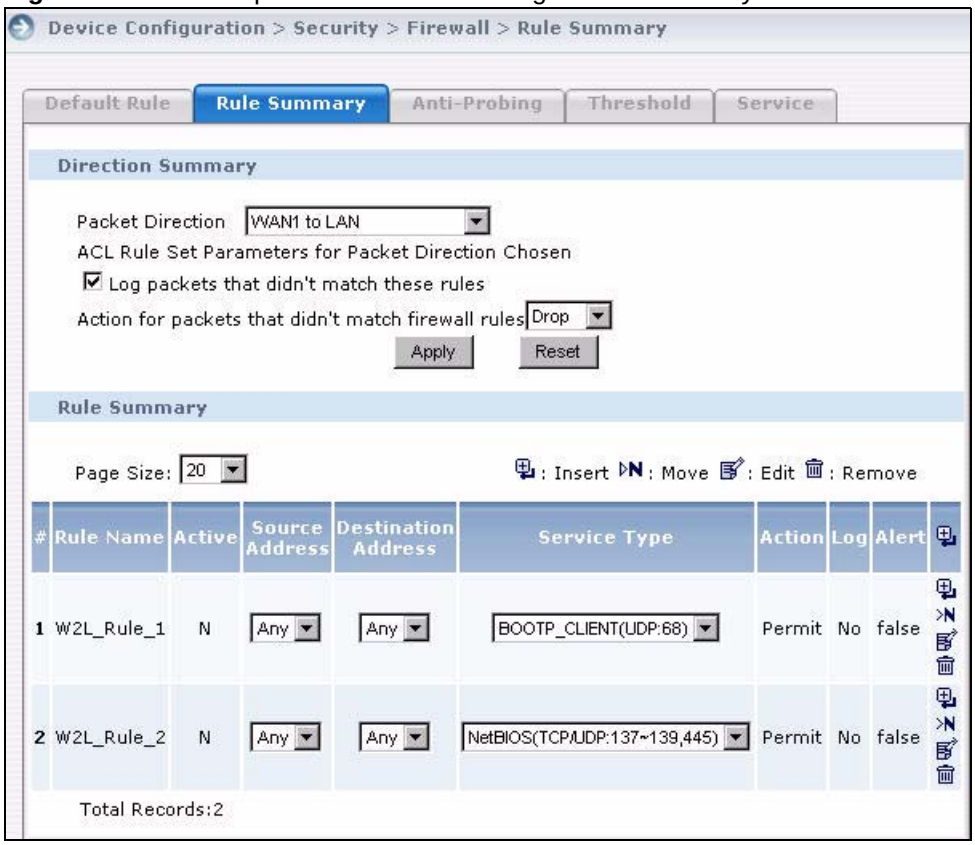
LABEL	DESCRIPTION
From, To	Set the firewall's default actions based on the direction of travel of packets. Here are some example descriptions of the directions of travel. **From LAN To LAN** means packets traveling from a computer on one LAN subnet to a computer on another LAN subnet on the LAN interface of the device or the device itself. The device does not apply the firewall to packets traveling from a LAN computer to another LAN computer on the same subnet. **From VPN** means traffic that came into the device through a VPN tunnel and is going to the selected "to" interface. For example, **From VPN To LAN** specifies the VPN traffic that is going to the LAN. The device applies the firewall to the traffic after decrypting it. **To VPN** is traffic that comes in through the selected "from" interface and goes out through any VPN tunnel. For example, **From LAN To VPN** specifies the traffic that is coming from the LAN and going out through a VPN tunnel. The device applies the firewall to the traffic before encrypting it. **From VPN To VPN** means traffic that comes in through a VPN tunnel and goes out through (another) VPN tunnel or terminates at the device. This is the case when the device is the hub in a hub-and-spoke VPN. This is also the case if you allow someone to use a service (like Telnet or HTTP) through a VPN tunnel to manage the device. The device applies the firewall to the traffic after decrypting it. Note: The VPN connection directions apply to the traffic going to or from the device's VPN tunnels. They do not apply to other VPN traffic for which the device is not one of the gateways (VPN pass-through traffic). Here are the default actions from which you can select. Select **Drop** to silently discard the packets without sending a TCP reset packet or an ICMP destination-unreachable message to the sender. Select **Reject** to deny the packets and send a TCP reset packet (for a TCP packet) or an ICMP destination-unreachable message (for a UDP packet) to the sender. Select **Permit** to allow the passage of the packets. The firewall rules for the WAN port with a higher route priority also apply to the dial backup connection.
Log	Select the check box next to a direction of packet travel to create a log when the above action is taken for packets that are traveling in that direction and do not match any of your customized rules.
Apply	Click **Apply** to save your changes back to the device.
Reset	Click this to reset this screen to its last saved values.

6.1.2 Rule Summary

Use the **Insert** button to add a new rule before an existing rule. Use **Move** to put an existing rule in a different place.

Select a device, click **Device Operation** in the menu bar and then click **Device Configuration** > **Security** > **Firewall** > **Rule Summary** in the navigation panel.

Figure 51 Device Operation > Device Configuration > Security > Firewall > Rule Summary



The following table describes the labels in this screen.

Table 41 Device Operation > Device Configuration > Security > Firewall > Rule Summary

LABEL	DESCRIPTION
Direction Summary	Firewall rules are grouped based on the direction of travel of packets to which they apply. Select a direction from the drop-down list box.
Packet Direction	Use the drop-down list box to select a direction of travel of packets for which you want to configure firewall rules.
ACL Rule Set Parameters for Packet Direction Chosen	
Log packets that don't match these rules.	Select the check box to create a log (when the above action is taken) for packets that are traveling in the selected direction and do not match any of the rules below.
Action for packets that don't match firewall rules	Select what action the device should take for packets that don't match any of the firewall rules you configured. Select **Drop** to silently discard the packets without sending a TCP reset packet or an ICMP destination-unreachable message to the sender. Select **Reject** to deny the packets and send a TCP reset packet (for a TCP packet) or an ICMP destination-unreachable message (for a UDP packet) to the sender. Select **Permit** to allow the passage of the packets.
Apply	Click **Apply** to save your changes back to the device.
Reset	Click this to reset this screen to its last saved values.

Table 41 Device Operation > Device Configuration > Security > Firewall > Rule Summary

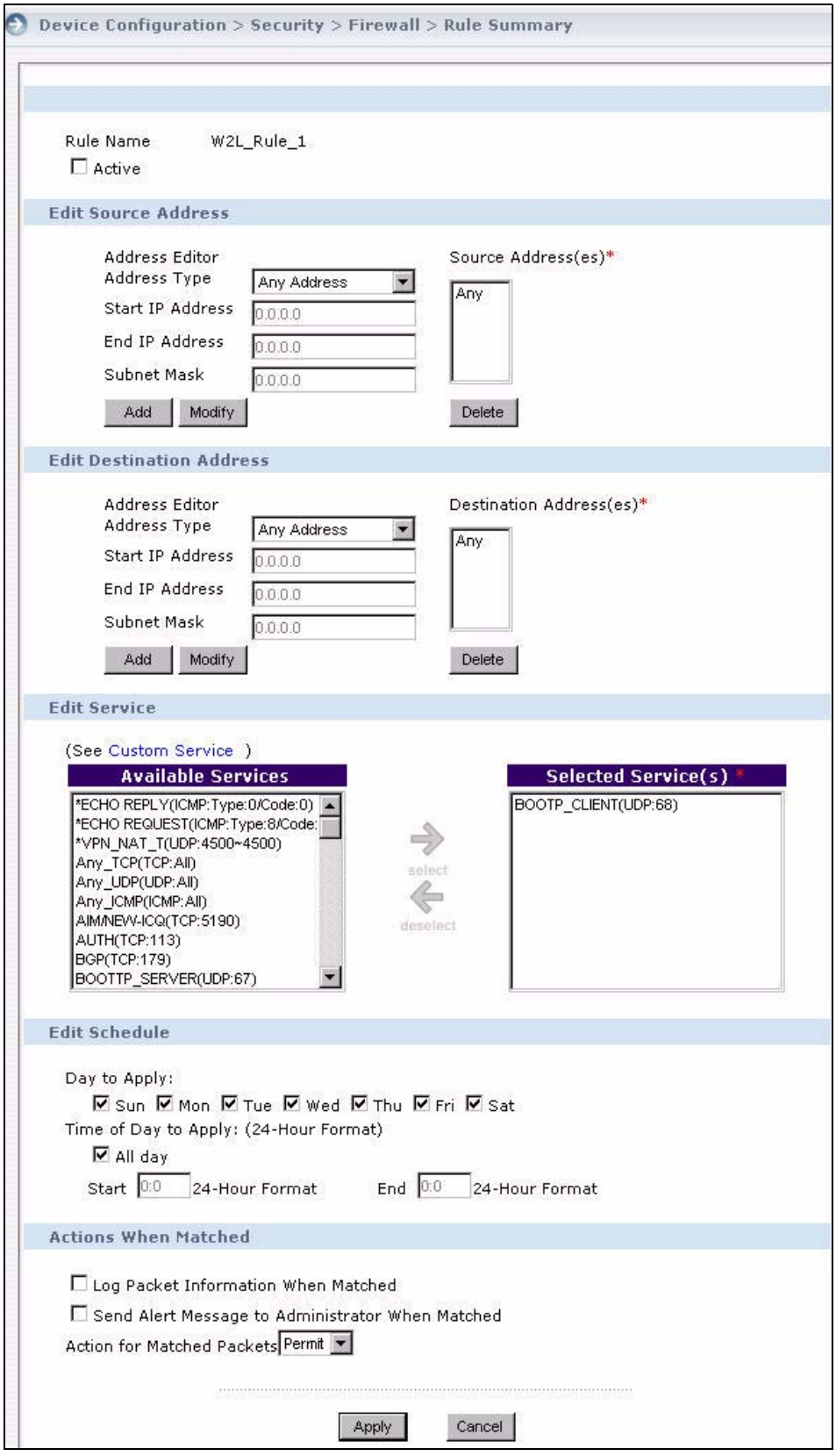
LABEL	DESCRIPTION
Rule Summary	The following fields summarize the rules you have created that apply to traffic traveling in the selected packet direction. The firewall rules that you configure (summarized below) take priority over the general firewall action settings above. Select an ACL hyperlink to edit that ACL rule.
#	This is your firewall rule number. Select a rule hyperlink to edit that rule. The ordering of your rules is important as rules are applied in turn. The **Move** field below allows you to reorder your rules.
Rule Name	This is the name of the firewall rule.
Active	This field displays whether a firewall is turned on (**true**) or not (**false**).
Source Address	This field lists the source IP address of the incoming packet. Click the list box to see all source address configured for the firewall rule.
Destination Address	This field lists the destination IP address of the outgoing packet. Click the list box to see all destination address configured for the firewall rule.
Service Type	This field displays the services to which this firewall rule applies. Click the list box to see all service type configured for the firewall rule. See Figure 52 on page 114 for more information.
Action	This field displays whether the firewall silently discards packets (**Drop**), discards packets and sends a TCP reset packet or an ICMP destination-unreachable message to the sender (**Reject**) or allows the passage of packets (**Permit**).
Log	This field shows you whether a log is created when packets match this rule (**Yes**) or not (**No**).
Alert	This field tells you whether this rule generates an alert (**true**) or not (**false**) when the rule is matched.
Insert	Click the insert icon to display the screen where you can configure a new firewall rule. The insert icon at the top of the row creates the new firewall rule before the others. The individual firewall rule insert icons create a new firewall rule after the row's firewall rule.
Move	Click **Move** to display the screen where you can move the rule to the number that you typed. The ordering of your rules is important as they are applied in order of their numbering.
Edit	Click **Edit** to modify a firewall rule.
Remove	Click **Remove** to delete an existing firewall rule. Note that subsequent firewall rules move up by one when you take this action.

6.1.3 Add/Edit

Each device has a different number of rules and custom ports; see the device User Guide for more details.

In Figure 51 on page 112, click **Edit** to modify an existing firewall rule or click **Insert** to create a new firewall rule.

Figure 52 Device Operation > Device Configuration > Security > Firewall > Rule Summary > Edit



The following table describes the labels in this screen.

Table 42 Device Operation > Device Configuration > Security > Firewall > Rule Summary > Add/Edit

LABEL	DESCRIPTION
Rule Name	Enter a descriptive name of up to 31 printable ASCII characters (except Extended ASCII characters) for the firewall rule. Spaces are allowed.
Active	Select this to turn this rule on. Clear this to turn this rule off.
Edit Source/ Destination Address	
Address Type	Do you want your rule to apply to packets with a particular (single) IP, a range of IP addresses (for example 192.168.1.10 to 192.169.1.50), a subnet or any IP address? Select an option from the drop-down list box that includes: **Single Address**, **Range Address**, **Subnet Address** and **Any Address**.
Start IP Address	Enter the single IP address or the starting IP address in a range here.
End IP Address	Enter the ending IP address in a range here.
Subnet Mask	Enter the subnet mask here, if applicable.
Add	Click **Add** to add a new address to the **Source** or **Destination Address(es)** box. You can add multiple addresses, ranges of addresses, and/or subnets.
Modify	To edit an existing source or destination address, select it from the box and click **Modify**.
Delete	Highlight an existing source or destination address from the **Source** or **Destination Address(es)** box above and click **Delete** to remove it.
Edit Service	
Available/ Selected Services	Highlight a service from the **Available Services** box on the left, then click the select icon to add it to the **Selected Service(s)** box on the right. To remove a service, highlight it in the **Selected Service(s)** box on the right, then click the deselect icon. Next to the name of a service, two fields appear in brackets. The first field indicates the IP protocol type (TCP, UDP, or ICMP). The second field indicates the IP port number that defines the service. (Note that there may be more than one IP protocol type). For example, look at the DNS entry, (UDP/TCP:53) means UDP port 53 and TCP port 53. Click the **Custom Service** link to go to the **Service** screen where you can configure custom service ports. See the device User's Guide for a list of commonly used services and port numbers. You can use the [CTRL] key and select multiple services at one time.
Edit Schedule	
Day to Apply	Select everyday or the day(s) of the week to apply the rule.
Time of Day to Apply (24-Hour Format)	Select **All Day** or enter the start and end times in the hour-minute format to apply the rule.
Actions When Matched	
Log Packet Information When Matched	This field determines if a log for packets that match the rule is created (**Yes**) or not (**No**). Go to **Device Operation** > **Device Configuration** > **Device Log** > **Log** and select the **Access Control** log category to have the device record these logs.
Send Alert Message to Administrator When Matched	Select the check box to have the device generate an alert when the rule is matched.

Table 42 Device Operation > Device Configuration > Security > Firewall > Rule Summary > Add/Edit (continued)

LABEL	DESCRIPTION
Action for Matched Packets	Use the drop-down list box to select what the firewall is to do with packets that match this rule. Select **Drop** to silently discard the packets without sending a TCP reset packet or an ICMP destination-unreachable message to the sender. Select **Reject** to deny the packets and send a TCP reset packet (for a TCP packet) or an ICMP destination-unreachable message (for a UDP packet) to the sender. Select **Permit** to allow the passage of the packets. Note: You also need to configure NAT port forwarding (or full featured NAT address mapping rules) if you want to allow computers on the WAN to access devices on the LAN. Note: You may also need to configure the remote management settings if you want to allow a WAN computer to manage the device or restrict management from the LAN.
Apply	Click **Apply** to save your customized settings and exit this screen.
Cancel	Click **Cancel** to exit this screen without saving.

6.1.4 Anti-Probing

Click **Device Operation** in the menu bar and then click **Device Configuration** > **Security** > **Firewall** > **Anti-Probing** in the navigation panel to open the following screen. Configure this screen to help keep the device hidden from probing attempts. You can specify which of the device's interfaces will respond to Ping requests and whether or not the device is to respond to probing for unused ports.

Figure 53 Device Operation > Device Configuration > Security > Firewall > Anti-Probing

The following table describes the labels in this screen.

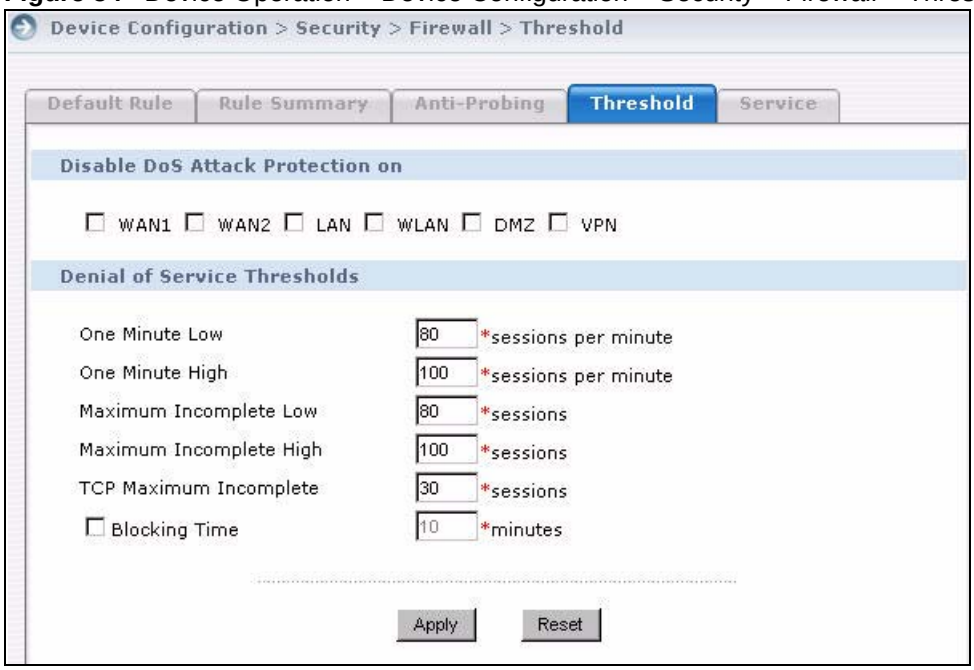
Table 43 Device Operation > Device Configuration > Security > Firewall > Anti-Probing

LABEL	DESCRIPTION
Respond to PING on	Select the interfaces on which you want the device to reply to incoming Ping requests.
Do not respond to requests for unauthorized services.	Select this option to prevent hackers from finding the device by probing for unused ports. If you select this option, the device will not respond to port request(s) for unused ports, thus leaving the unused ports and the device unseen. If this option is not selected, the device will reply with an ICMP port unreachable packet for a port probe on its unused UDP ports and a TCP reset packet for a port probe on its unused TCP ports. Note that the probing packets must first traverse the device's firewall rule checks before reaching this anti-probing mechanism. Therefore if a firewall rule stops a probing packet, the device reacts based on the firewall rule to either send a TCP reset packet for a blocked TCP packet (or an ICMP port-unreachable packet for a blocked UDP packets) or just drop the packets without sending a response packet.
Apply	Click **Apply** to save your changes back to the device.
Reset	Click **Reset** to begin configuring this screen afresh.

6.1.5 Threshold

Click **Device Operation** in the menu bar and then click **Device Configuration** > **Security** > **Firewall** > **Threshold** in the navigation panel to bring up the next screen. The global values specified for the threshold and timeout apply to all TCP connections.

Figure 54 Device Operation > Device Configuration > Security > Firewall > Threshold



The following table describes the labels in this screen.

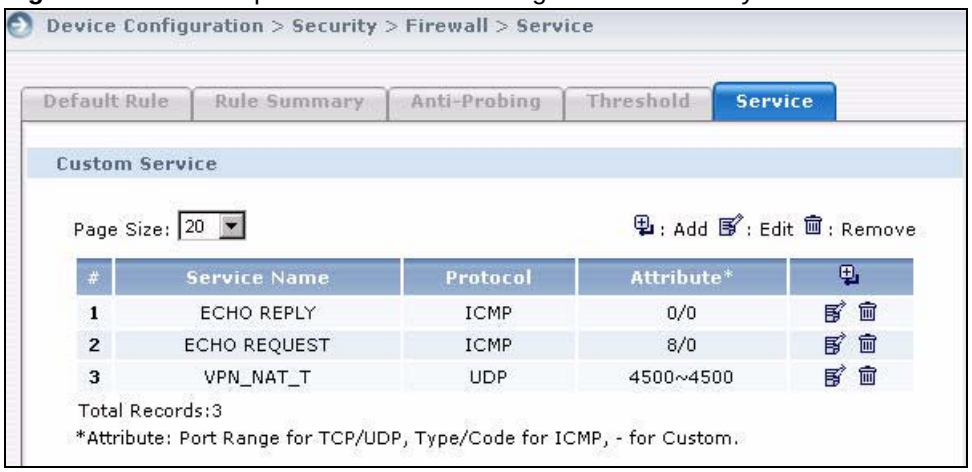
Table 44 Device Operation > Device Configuration > Security > Firewall > Threshold

LABEL	DESCRIPTION
Disable DoS Attack Protection on	Select the interface(s) (or VPN tunnels) for which you want the device to not use the Denial of Service protection thresholds. This disables DoS protection on the selected interface (or all VPN tunnels). You may want to disable DoS protection for an interface if the device is treating valid traffic as DoS attacks. Another option would be to raise the thresholds.
Denial of Service Thresholds	The device measures both the total number of existing half-open sessions and the rate of session establishment attempts. Both TCP and UDP half-open sessions are counted in the total number and rate measurements. Measurements are made once a minute.
One Minute Low	This is the rate of new half-open sessions per minute that causes the firewall to stop deleting half-open sessions. The device continues to delete half-open sessions as necessary, until the rate of new connection attempts drops below this number.
One Minute High	This is the rate of new half-open sessions per minute that causes the firewall to start deleting half-open sessions. When the rate of new connection attempts rises above this number, the device deletes half-open sessions as required to accommodate new connection attempts. For example, if you set the one minute high to 100, the device starts deleting half-open sessions when more than 100 session establishment attempts have been detected in the last minute. It stops deleting half-open sessions when the number of session establishment attempts detected in a minute goes below the number set as the one minute low.
Maximum Incomplete Low	This is the number of existing half-open sessions that causes the firewall to stop deleting half-open sessions. The device continues to delete half-open requests as necessary, until the number of existing half-open sessions drops below this number.
Maximum Incomplete High	This is the number of existing half-open sessions that causes the firewall to start deleting half-open sessions. When the number of existing half-open sessions rises above this number, the device deletes half-open sessions as required to accommodate new connection requests. Do not set **Maximum Incomplete High** to lower than the current **Maximum Incomplete Low** number. For example, if you set the maximum incomplete high to 100, the device starts deleting half-open sessions when the number of existing half-open sessions rises above 100. It stops deleting half-open sessions when the number of existing half-open sessions drops below the number set as the maximum incomplete low.
TCP Maximum Incomplete	An unusually high number of half-open sessions with the same destination host address could indicate that a DoS attack is being launched against the host. Specify the number of existing half-open TCP sessions with the same destination host IP address that causes the firewall to start dropping half-open sessions to that same destination host IP address. Enter a number between 1 and 256. As a general rule, you should choose a smaller number for a smaller network, a slower system or limited bandwidth. The device sends alerts whenever the **TCP Maximum Incomplete** is exceeded.
Blocking Time	Select the action that the device takes when the TCP maximum incomplete threshold is reached. Select the check box if you want the device to deny new connection requests for the number of minutes that you specify (between 1 and 255). Clear the check box if you want the device to delete the oldest half open session when a new connection request comes.
Apply	Click **Apply** to save your changes back to the device.
Reset	Click **Reset** to begin configuring this screen afresh.

6.1.6 Service

Click **Device Operation** in the menu bar and then click **Device Configuration** > **Security** > **Firewall** > **Service** in the navigation panel to open the screen as shown next. Use this screen to configure custom services for use in firewall rules or view the services that are predefined in the device.

Figure 55 Device Operation > Device Configuration > Security > Firewall > Service



The following table describes the labels in this screen.

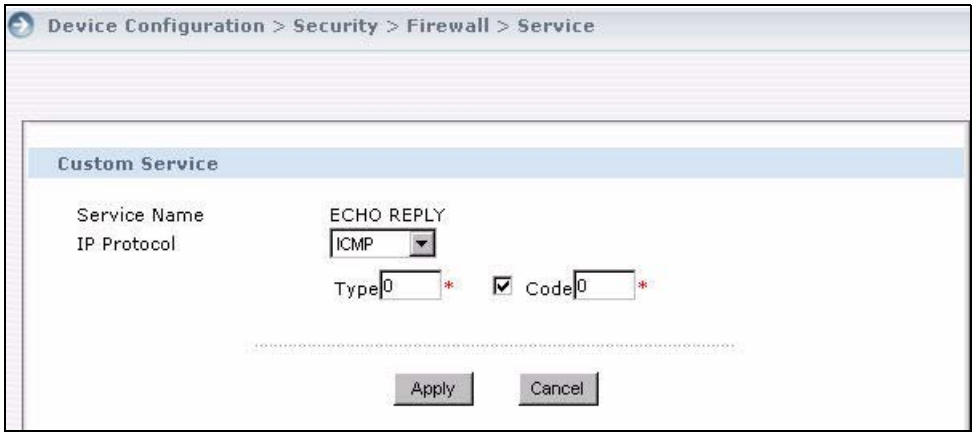
Table 45 Device Operation > Device Configuration > Security > Firewall > Service

LABEL	DESCRIPTION
Custom Service	This table shows all configured custom services.
#	This is the index number of the custom service. Click the number to go to the screen where you can edit the service.
Service Name	This is the name of the service.
Protocol	This is the IP protocol type. If you selected **Custom**, this is the IP protocol value you entered.
Attribute	This field displays the IP port number(s) or ICMP type and code that defines the service.
Add	Click this button to bring up the screen that you use to configure a new custom service that is not in the predefined list of services.
Delete	Click the delete icon to remove an existing service.

6.1.7 Add/Edit Service

Click **Add** or **Edit** on an existing service record in the **Device Operation** > **Device Configuration** > **Security** > **Firewall** > **Service** screen to open the screen as shown next. Use this screen to configure a custom service entry not is not predefined in the device.

Figure 56 Device Operation > Device Configuration > Security > Firewall > Service > Add/ Edit



The following table describes the labels in this screen.

Table 46 Device Operation > Device Configuration > Security > Firewall > Service > Add/ Edit

LABEL	DESCRIPTION
Service Name	Enter a descriptive name of up to 31 printable ASCII characters (except Extended ASCII characters) for the custom service. You cannot use the left parentheses "(". Spaces are allowed.
IP Protocol	Choose the IP protocol (**TCP**, **UDP**, **TCP/UDP**, **ICMP** or **Custom**) that defines your customized service from the drop down list box. If you select **Custom**, specify the protocol's number. For example, ICMP is 1, TCP is 6, UDP is 17 and so on.
Port Range	This field is available only when you select **TCP/UDP**, **TCP**, or **UDP** in the **IP Protocol** field. Enter the port number (from 1 to 255) that defines the customized service To specify one port only, enter the port number in the **From** field and enter it again in the **To** field. To specify a span of ports, enter the first port in the **From** field and enter the last port in the **To** field.
Type/Code	This field is available only when you select **ICMP** in the **IP Protocol** field. The ICMP messages are identified by their types and in some cases codes. Enter the type number in the **Type** field and select the **Code** radio button and enter the code number if any.
Custom Protocol	This field is available only when you select **Custom** in the **IP Protocol** field. Specify the protocol's number. For example, ICMP is 1, TCP is 6, UDP is 17 and so on.
Apply	Click **Apply** to save your customized settings and exit this screen.
Cancel	Click **Cancel** to exit this screen without saving.

6.2 VPN

This section shows you how to configure the **VPN** screens. These screens may vary depending on which model you're configuring. Please see the device's User's Guide for more information about any of these screens or fields.

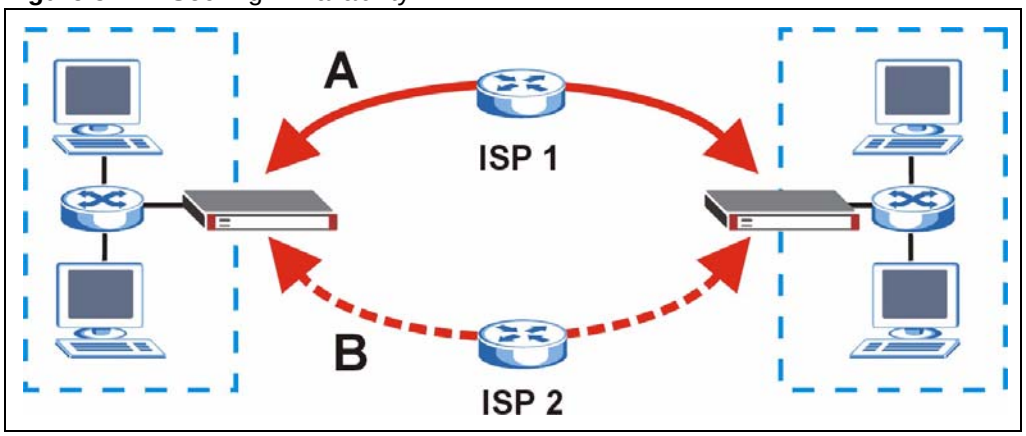
There are two sets of **VPN** screens, VPN version 1.0 and VPN version 1.1. The version depends on the device's type and firmware version.

6.3 IPSec High Availability

IPSec high availability (also known as VPN high availability) allows you to use a redundant (backup) VPN connection to another WAN interface on the remote IPSec router if the primary (regular) VPN connection goes down.

In the following figure, if the primary VPN tunnel (A) goes down, the device uses the redundant VPN tunnel (B).

Figure 57 IPSec High Availability



When setting up a IPSec high availability VPN tunnel, the remote IPSec router:

- Must have multiple WAN connections
- Only needs the configure one corresponding IPSec rule
- Should only have IPSec high availability settings in its corresponding IPSec rule if your device has multiple WAN connections
- Should ideally identify itself by a domain name or dynamic domain name (it must otherwise have My Address set to 0.0.0.0)
- Should use a WAN connectivity check to this device's WAN IP address

If the remote IPSec router is not a device, you may also want to avoid setting the IPSec rule to nailed up.

6.3.1 VPN Tunnel Summary (VPN version 1.0)

To open this screen, select a device, click **Device Operation** in the menu bar and then click **Device Operation** > **Device Configuration** > **Security** > **VPN** in the navigation panel.

Figure 58 Device Operation > Device Configuration > Security > VPN > VPN Rules (IKE)

Device Configuration > Security > VPN > VPN Rules(IKE)
VPN Rules(IKE)
VPN Rules(Manual)
Global Setting
VPN Rules
: Add : Move : Edit : Remove
Name Local IP Address Remote IP Address
1 ike_ZW5-ZW70_nv0gmcj0 1.2.3.202 0.0.0.0
1 - 1 ipsec_ZW5-ZW70_nv0o03j3 10.0.0.1 / 255.0.0.0 0.0.0.0 / 0.0.0.0
Total Records:2

The following table describes the labels in this screen.

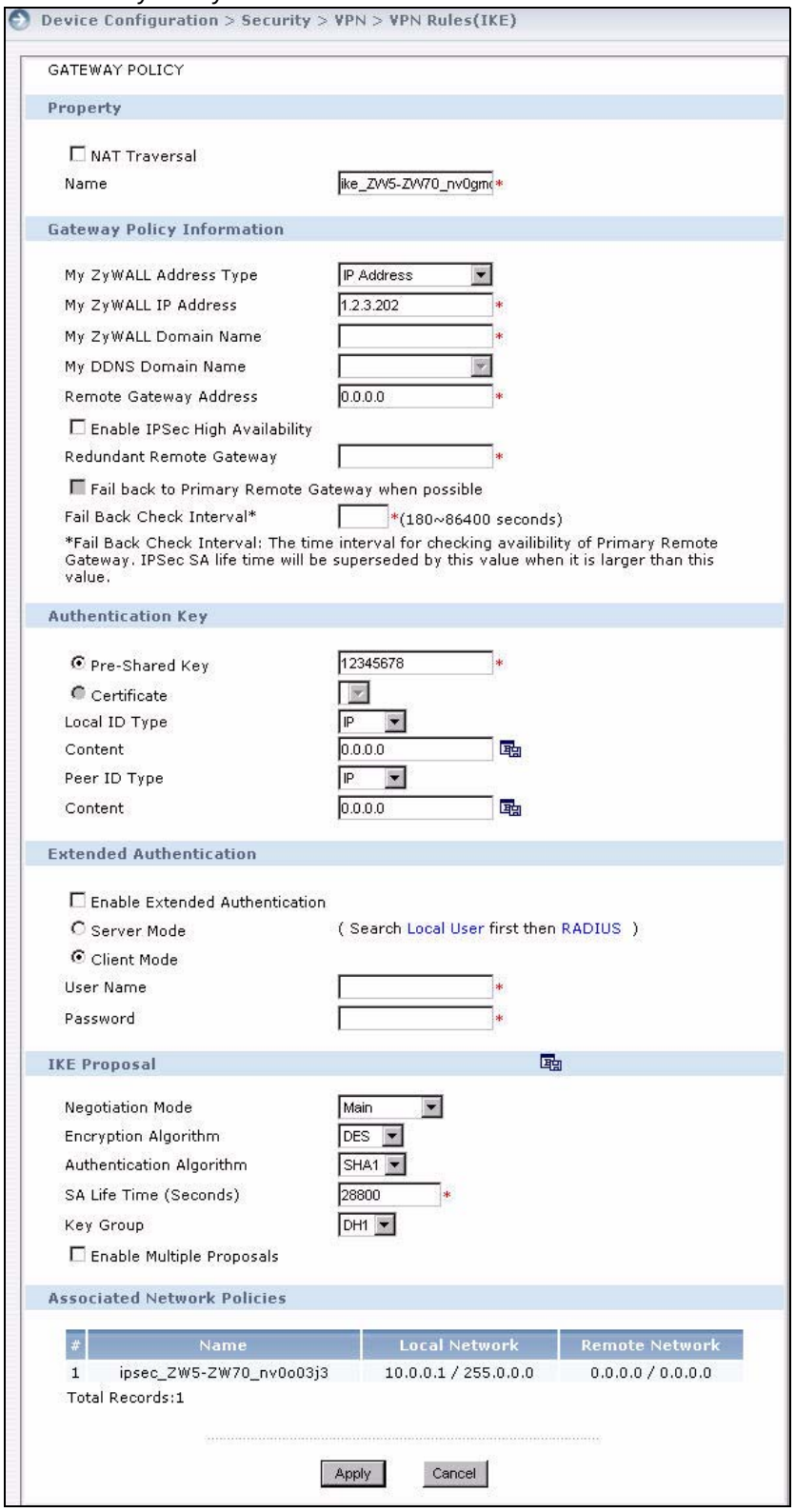
Table 47 Device Operation > Device Configuration > Security > VPN > VPN Rules

LABEL	Description
#	This is the VPN policy index number.
Name	This field displays the identification name for this VPN policy.
Local IP Address	This field displays the IP address(es) of the network behind the device.
Remote IP Address	This field displays the IP address(es) of the network behind the remote device.
Add	Click **Add** to create a new VPN tunnel.
Edit	Click **Edit** to modify an existing VPN rule.
Move	Click **Move** to display a screen in which you can associate a network policy to a gateway policy or move it to the recycle bin.
Remove	Click **Remove** to delete a VPN rule.

6.3.2 VPN Rules (IKE) > Gateway Policy Add/Edit

In the **VPN Rule (IKE)** screen, click **Add** in the top of the column or click **Edit** from a existing gateway policy to display the **Gateway Policy** screen.

Figure 59 Device Operation > Device Configuration > Security > VPN > VPN Rules (IKE) > Gateway Policy Add/Edit



The following table describes the labels in this screen.

Table 48 Device Operation > Device Configuration > Security > VPN > VPN Rules (IKE) > Gateway Policy Add/Edit

LABEL	DESCRIPTION
Property	
NAT Traversal	Select this check box to enable NAT traversal. NAT traversal allows you to set up a VPN connection when there are NAT routers between the two IPSec routers. Note: The remote IPSec router must also have NAT traversal enabled. You can use NAT traversal with **ESP** protocol using **Transport** or **Tunnel** mode, but not with **AH** protocol nor with manual key management. In order for an IPSec router behind a NAT router to receive an initiating IPSec packet, set the NAT router to forward UDP port 500 to the IPSec router behind the NAT router.
Name	Type up to 32 characters to identify this VPN gateway policy. You may use any character, including spaces, but the device drops trailing spaces.
Gateway Policy Information	
My ZyWALL Address Type	This field specifies how the IP address of the device is specified. **IP Address**: The device's IP address is a static IP address. **Domain Name**: The device's IP address is the IP address mapped to a specified domain name. **DDNS Domain Name**: The device's IP address is the IP address mapped to a specified DDNS domain name. The VPN tunnel has to be rebuilt if the device's IP address changes after setup.
My ZyWALL IP Address	This field is enabled if **My ZyWALL Address Type** is **IP Address**. Enter the device's static WAN IP address or leave the field set to 0.0.0.0. The following applies if this field is configured as **0.0.0.0**: • When the WAN port operation mode is set to **Active/Passive**, the device uses the IP address (static or dynamic) of the WAN port that is in use. • When the WAN port operation mode is set to **Active/Active**, the device uses the IP address (static or dynamic) of the primary (highest priority) WAN port to set up the VPN tunnel as long as the corresponding WAN1 or WAN2 connection is up. If the corresponding WAN1 or WAN2 connection goes down, the device uses the IP address of the other WAN port. • If both WAN connections go down, the device uses the dial backup IP address for the VPN tunnel when using dial backup or the LAN IP address when using traffic redirect. See the chapter on WAN for details on dial backup and traffic redirect.
My ZyWALL Domain Name	This field is enabled if **My ZyWALL Address Type** is **IP Address**. Enter the domain name associated with the device in the VPN tunnel.
My DDNS Domain Name	This field is enabled if **My ZyWALL Address Type** is **IP Address**. Select the DDNS domain name associated with the device in the VPN tunnel. Use the **DDNS** screens to configure these domain names.

Table 48 Device Operation > Device Configuration > Security > VPN > VPN Rules (IKE) > Gateway Policy Add/Edit

LABEL	DESCRIPTION
Remote Gateway Address	Type the WAN IP address or the domain name (up to 31 characters) of the IPSec router with which you're making the VPN connection. Set this field to **0.0.0.0** if the remote IPSec router has a dynamic WAN IP address. In order to have more than one active rule with the **Remote Gateway Address** field set to **0.0.0.0**, the ranges of the local IP addresses cannot overlap between rules. If you configure an active rule with **0.0.0.0** in the **Remote Gateway Address** field and the LAN's full IP address range as the local IP address, then you cannot configure any other active rules with the **Remote Gateway Address** field set to **0.0.0.0**.
Enable IPSec High Availability	Turn on the high availability feature to use a redundant (backup) VPN connection to another WAN interface on the remote IPSec router if the primary (regular) VPN connection goes down. The remote IPSec router must have a second WAN connection in order for you to use this. To use this, you must identify both the primary and the redundant remote IPSec routers by WAN IP address or domain name (you cannot set either to **0.0.0.0**).
Redundant Remote Gateway	Type the WAN IP address or the domain name (up to 31 characters) of the backup IPSec router to use when the device cannot not connect to the primary remote gateway.
Fail back to Primary Remote Gateway when possible	Select this to have the device change back to using the primary remote gateway if the connection becomes available again.
Fail Back Check Interval*	Set how often the device should check the connection to the primary remote gateway while connected to the redundant remote gateway. Each gateway policy uses one or more network policies. If the fall back check interval is shorter than a network policy's SA life time, the fall back check interval is used as the check interval and network policy SA life time. If the fall back check interval is longer than a network policy's SA life time, the SA lifetime is used as the check interval and network policy SA life time.
Authentication Key	
Pre-Shared Key	Select the **Pre-Shared Key** radio button and type your pre-shared key in this field. A pre-shared key identifies a communicating party during a phase 1 IKE negotiation. It is called "pre-shared" because you have to share it with another party before you can communicate with them over a secure connection. Type from 8 to 31 case-sensitive ASCII characters or from 16 to 62 hexadecimal ("0-9", "A-F") characters. You must precede a hexadecimal key with a "0x (zero x), which is not counted as part of the 16 to 62 character range for the key. For example, in "0x0123456789ABCDEF", 0x denotes that the key is hexadecimal and 0123456789ABCDEF is the key itself. Both ends of the VPN tunnel must use the same pre-shared key. You will receive a PYLD_MALFORMED (payload malformed) packet if the same pre-shared key is not used on both ends.
Certificate	Select the **Certificate** radio button to identify the device by a certificate. Use the drop-down list box to select the certificate to use for this VPN tunnel. You must have certificates already configured in the **My Certificates** screen. Click **My Certificates** to go to the **My Certificates** screen where you can view the device's list of certificates.

Table 48 Device Operation > Device Configuration > Security > VPN > VPN Rules (IKE) > Gateway Policy Add/Edit

LABEL	DESCRIPTION
Local ID Type	Select **IP** to identify this device by its IP address. Select **DNS** to identify this device by a domain name. Select **E-mail** to identify this device by an e-mail address. You do not configure the local ID type and content when you set **Authentication Key** to **Certificate**. The device takes them from the certificate you select.
Content	When you select **IP** in the **Local ID Type** field, type the IP address of your computer in the local **Content** field. The device automatically uses the IP address in the **My ZyWALL** field (refer to the **My ZyWALL** field description) if you configure the local **Content** field to **0.0.0.0** or leave it blank. It is recommended that you type an IP address other than **0.0.0.0** in the local **Content** field or use the **DNS** or **E-mail** ID type in the following situations. • When there is a NAT router between the two IPSec routers. • When you want the remote IPSec router to be able to distinguish between VPN connection requests that come in from IPSec routers with dynamic WAN IP addresses. When you select **DNS** or **E-mail** in the **Local ID Type** field, type a domain name or e-mail address by which to identify this device in the local **Content** field. Use up to 31 ASCII characters including spaces, although trailing spaces are truncated. The domain name or e-mail address is for identification purposes only and can be any string.
Peer ID Type	Select from the following when you set **Authentication Key** to **Pre-shared Key**. • Select **IP** to identify the remote IPSec router by its IP address. • Select **DNS** to identify the remote IPSec router by a domain name. • Select **E-mail** to identify the remote IPSec router by an e-mail address. Select from the following when you set **Authentication Key** to **Certificate**. • Select **IP** to identify the remote IPSec router by the IP address in the subject alternative name field of the certificate it uses for this VPN connection. • Select **DNS** to identify the remote IPSec router by the domain name in the subject alternative name field of the certificate it uses for this VPN connection. • Select **E-mail** to identify the remote IPSec router by the e-mail address in the subject alternative name field of the certificate it uses for this VPN connection. • Select **Subject Name** to identify the remote IPSec router by the subject name of the certificate it uses for this VPN connection. • Select **Any** to have the device not check the remote IPSec router's ID.

Table 48 Device Operation > Device Configuration > Security > VPN > VPN Rules (IKE) > Gateway Policy Add/Edit

LABEL	DESCRIPTION
Content	The configuration of the peer content depends on the peer ID type. Do the following when you set **Authentication Key** to **Pre-shared Key**. • For **IP**, type the IP address of the computer with which you will make the VPN connection. If you configure this field to **0.0.0.0** or leave it blank, the device will use the address in the **Remote Gateway Address** field (refer to the **Remote Gateway Address** field description). • For **DNS** or **E-mail**, type a domain name or e-mail address by which to identify the remote IPSec router. Use up to 31 ASCII characters including spaces, although trailing spaces are truncated. The domain name or e-mail address is for identification purposes only and can be any string. It is recommended that you type an IP address other than **0.0.0.0** or use the **DNS** or **E-mail** ID type in the following situations: • When there is a NAT router between the two IPSec routers. • When you want the device to distinguish between VPN connection requests that come in from remote IPSec routers with dynamic WAN IP addresses. Do the following when you set **Authentication Key** to **Certificate**. • For **IP**, type the IP address from the subject alternative name field of the certificate the remote IPSec router will use for this VPN connection. If you configure this field to **0.0.0.0** or leave it blank, the device will use the address in the **Remote Gateway Address** field (refer to the **Remote Gateway Address** field description). • For **DNS** or **E-mail**, type the domain name or e-mail address from the subject alternative name field of the certificate the remote IPSec router will use for this VPN connection. • For **Subject Name**, type the subject name of the certificate the remote IPSec router will use for this VPN connection. Use up to255 ASCII characters including spaces. • For **Any**, the peer **Content** field is not available. • Regardless of how you configure the **ID Type** and **Content** fields, two active SAs cannot have both the local and remote IP address ranges overlap between rules.
Extended Authentication	
Enable Extended Authentication	Select this check box to activate extended authentication.
Server Mode	Select **Server Mode** to have this device authenticate extended authentication clients that request this VPN connection. You must also configure the extended authentication clients' usernames and passwords in the authentication server's local user database or a RADIUS server. Click **Local User** to go to the **Local User Database** screen where you can view and/or edit the list of user names and passwords. Click **RADIUS** to go to the **RADIUS** screen where you can configure the device to check an external RADIUS server. During authentication, if the device (in server mode) does not find the extended authentication clients' user name in its internal user database and an external RADIUS server has been enabled, it attempts to authenticate the client through the RADIUS server.
Client Mode	Select **Client Mode** to have your device use a username and password when initiating this VPN connection to the extended authentication server device. Only a VPN extended authentication client can initiate this VPN connection.
User Name	Enter a user name for your device to be authenticated by the VPN peer (in server mode). The user name can be up to 31 case-sensitive ASCII characters, but spaces are not allowed. You must enter a user name and password when you select client mode.

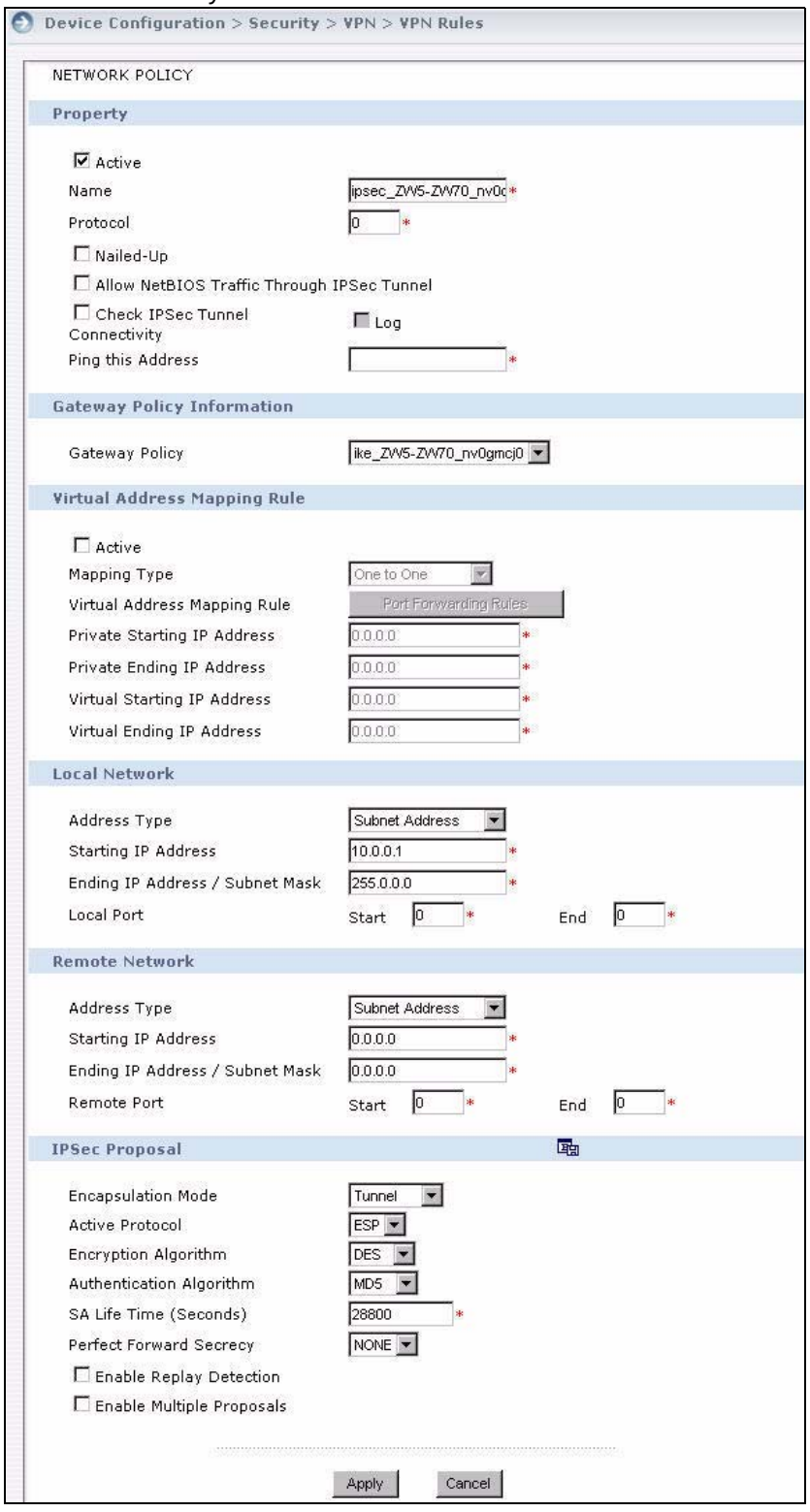
Table 48 Device Operation > Device Configuration > Security > VPN > VPN Rules (IKE) > Gateway Policy Add/Edit

LABEL	DESCRIPTION
Password	Enter the corresponding password for the above user name. The password can be up to 31 case-sensitive ASCII characters, but spaces are not allowed.
IKE Proposal	
Negotiation Mode	Select **Main** or **Aggressive** from the drop-down list box. Multiple SAs connecting through a secure gateway must have the same negotiation mode.
Encryption Algorithm	Select **DES**, **3DES** or **AES** from the drop-down list box. When you use one of these encryption algorithms for data communications, both the sending device and the receiving device must use the same secret key, which can be used to encrypt and decrypt the message or to generate and verify a message authentication code. The DES encryption algorithm uses a 56-bit key. Triple DES (**3DES**) is a variation on DES that uses a 168-bit key. As a result, **3DES** is more secure than **DES**. It also requires more processing power, resulting in increased latency and decreased throughput. This implementation of AES uses a 128-bit key. **AES** is faster than **3DES**.
Authentication Algorithm	Select **SHA1** or **MD5** from the drop-down list box. **MD5** (Message Digest 5) and **SHA1** (Secure Hash Algorithm) are hash algorithms used to authenticate packet data. The **SHA1** algorithm is generally considered stronger than **MD5**, but is slower. Select **MD5** for minimal security and **SHA-1** for maximum security.
SA Life Time (Seconds)	Define the length of time before an IKE SA automatically renegotiates in this field. It may range from 180 to 3,000,000 seconds (almost 35 days). A short SA Life Time increases security by forcing the two VPN gateways to update the encryption and authentication keys. However, every time the VPN tunnel renegotiates, all users accessing remote resources are temporarily disconnected.
Key Group	You must choose a key group for phase 1 IKE setup. **DH1** (default) refers to Diffie-Hellman Group 1 a 768 bit random number. **DH2** refers to Diffie-Hellman Group 2 a 1024 bit (1Kb) random number.
Enable Multiple Proposals	Select this check box to allow the device to use any of its phase 1 or phase 2 encryption and authentication algorithms when negotiating an IPSec SA. When you enable multiple proposals, the device allows the remote IPSec router to select which encryption and authentication algorithms to use for the VPN tunnel, even if they are less secure than the ones you configure for the VPN rule. Clear this check box to have the device use only the phase 1 or phase 2 encryption and authentication algorithms configured below when negotiating an IPSec SA.
Apply	Click **Apply** to save your changes back to the device.
Cancel	Click **Cancel** to exit this screen without saving.

6.3.3 VPN Rules (IKE) > Network Policy Add/Edit

In the **VPN Rule (IKE)** screen, click the **Add** icon from a gateway policy or click **Edit** from an existing network policy to display the **Network Policy** screen.

Figure 60 Device Operation > Device Configuration > Security > VPN > VPN Rules (IKE) > Network Policy Add/Edit



The following table describes the labels in this screen.

Table 49 Device Operation > Device Configuration > VPN > IKE IPSec

LABEL	DESCRIPTION
Active	If the **Active** check box is selected, packets for the tunnel trigger the device to build the tunnel. Clear the **Active** check box to turn the network policy off. The device does not apply the policy. Packets for the tunnel do not trigger the tunnel. If you clear the **Active** check box while the tunnel is up (and click **Apply**), you turn off the network policy and the tunnel goes down.
Name	Type a name to identify this VPN network policy. You may use any character, including spaces, but the device drops trailing spaces.
Protocol	Enter 1 for ICMP, 6 for TCP, 17 for UDP, etc. 0 is the default and signifies any protocol.
Nailed-Up	Select this check box to turn on the nailed up feature for this SA. Turn on nailed up to have the device automatically reinitiate the SA after the SA lifetime times out, even if there is no traffic. The device also reinitiates the SA when it restarts. The device also rebuilds the tunnel if it was disconnected due to the output or input idle timer.
Allow NetBIOS Traffic Through IPSec Tunnel	NetBIOS (Network Basic Input/Output System) are TCP or UDP packets that enable a computer to connect to and communicate with a LAN. It may sometimes be necessary to allow NetBIOS packets to pass through VPN tunnels in order to allow local computers to find computers on the remote network and vice versa. Select this check box to send NetBIOS packets through the VPN connection.
Check IPSec Tunnel Connectivity	Select the check box and configure an IP address in the **Ping this Address** field to have the device periodically test the VPN tunnel to the remote IPSec router. The device pings the IP address every minute. The device starts the IPSec connection idle timeout timer when it sends the ping packet. If there is no traffic from the remote IPSec router by the time the timeout period expires, the device disconnects the VPN tunnel.
Log	Select this check box to set the device to create logs when it cannot ping the remote device.
Ping this Address	If you select **Check IPSec Tunnel Connectivity**, enter the IP address of a computer at the remote IPSec network. The computer's IP address must be in this IP policy's remote range (see the **Remote Network** fields).
Gateway Policy Information	
Gateway Policy	Select the gateway policy with which you want to use the VPN policy.
Virtual Address Mapping Rule	Virtual address mapping over VPN is available with the routing and zero configuration modes.
Active	Enable this feature to have the device use virtual (translated) IP addresses for the local network for the VPN connection. You do not configure the **Local Network** fields when you enable virtual address mapping. Virtual address mapping allows local and remote networks to have overlapping IP addresses. Virtual address mapping (NAT over IPSec) translates the source IP addresses of computers on your local network to other (virtual) IP addresses before sending the packets to the remote IPSec router. This translation hides the source IP addresses of computers in the local network.

Table 49 Device Operation > Device Configuration > VPN > IKE IPSec (continued)

LABEL	DESCRIPTION
Mapping Type	Select **One-to-One** to translate a single (static) IP address on your LAN to a single virtual IP address. Select **Many-to-One** to translate a range of (static) IP addresses on your LAN to a single virtual IP address. Many-to-one rules are for traffic going out from your LAN, through the VPN tunnel, to the remote network. Use port forwarding rules to allow incoming traffic from the remote network. Select **Many One-to-One** to translate a range of (static) IP addresses on your LAN to a range of virtual IP addresses.
Virtual Address Mapping Rule	If you are configuring a **Many-to-One** rule, click this button to go to a screen where you can configure port forwarding for your VPN tunnels. The VPN network policy port forwarding rules let the device forward traffic coming in through the VPN tunnel to the appropriate IP address.
Private Starting IP Address	Specify the IP addresses of the devices behind the device that can use the VPN tunnel. When you select **One-to-One** in the **Type** field, enter the (static) IP address of a computer on the LAN behind your device. When you select **Many-to-One** or **Many One-to-One** in the **Type** field, enter the beginning (static) IP address in a range of computers on the LAN behind your device.
Private Ending IP Address	When you select **Many-to-One** or **Many One-to-One** in the **Type** field, enter the ending (static) IP address in a range of computers on the LAN behind your device.
Virtual Starting IP Address	Enter the (static) IP addresses that represent the translated private IP addresses. These must correspond to the remote IPSec router's configured remote IP addresses. When you select **One-to-One** or **Many-to-One** in the **Type** field, enter an IP address as the translated IP address. Many-to-one rules are only for traffic going to the remote network. Use port forwarding rules to allow incoming traffic from the remote network. When you select **Many One-to-One** in the **Type** field, enter the beginning IP address of a range of translated IP addresses.
Virtual Ending IP Address	When you select **Many One-to-One** in the **Type** field, enter the ending (static) IP address of a range of translated IP addresses. The size of the private address range must be equal to the size of the translated virtual address range.
Local Network	Local IP addresses must be static and correspond to the remote IPSec router's configured remote IP addresses. Two active SAs cannot have the local and remote IP address(es) both the same. Two active SAs can have the same local or remote IP address, but not both. You can configure multiple SAs between the same local and remote IP addresses, as long as only one is active at any time.
Address Type	Use the drop-down list box to choose **Single Address**, **Range Address**, or **Subnet Address**. Select **Single Address** for a single IP address. Select **Range Address** for a specific range of IP addresses. Select **Subnet Address** to specify IP addresses on a network by their subnet mask.
Starting IP Address	When the **Address Type** field is configured to **Single Address**, enter a (static) IP address on the LAN behind your device. When the **Address Type** field is configured to **Range Address**, enter the beginning (static) IP address, in a range of computers on the LAN behind your device. When the **Address Type** field is configured to **Subnet Address**, this is a (static) IP address on the LAN behind your device.

Table 49 Device Operation > Device Configuration > VPN > IKE IPSec (continued)

LABEL	DESCRIPTION
Ending IP Address/ Subnet Mask	When the **Address Type** field is configured to **Single Address**, this field is N/A. When the **Address Type** field is configured to **Range Address**, enter the end (static) IP address, in a range of computers on the LAN behind your device. When the **Address Type** field is configured to **Subnet Address**, this is a subnet mask on the LAN behind your device.
Local Port	0 is the default and signifies any port. Type a port number from 0 to 65535 in the **Start** and **End** fields. Some of the most common IP ports are: 21, FTP; 53, DNS; 23, Telnet; 80, HTTP; 25, SMTP; 110, POP3.
Remote Network	Remote IP addresses must be static and correspond to the remote IPSec router's configured local IP addresses. Two active SAs cannot have the local and remote IP address(es) both the same. Two active SAs can have the same local or remote IP address, but not both. You can configure multiple SAs between the same local and remote IP addresses, as long as only one is active at any time.
Address Type	Use the drop-down list box to choose **Single Address**, **Range Address**, or **Subnet Address**. Select **Single Address** with a single IP address. Select **Range Address** for a specific range of IP addresses. Select **Subnet Address** to specify IP addresses on a network by their subnet mask.
Starting IP Address	When the **Address Type** field is configured to **Single Address**, enter a (static) IP address on the network behind the remote IPSec router. When the Addr Type field is configured to **Range Address**, enter the beginning (static) IP address, in a range of computers on the network behind the remote IPSec router. When the **Address Type** field is configured to **Subnet Address**, enter a (static) IP address on the network behind the remote IPSec router.
Ending IP Address/ Subnet Mask	When the **Address Type** field is configured to **Single Address**, this field is N/A. When the **Address Type** field is configured to **Range Address**, enter the end (static) IP address, in a range of computers on the network behind the remote IPSec router. When the **Address Type** field is configured to **Subnet Address**, enter a subnet mask on the network behind the remote IPSec router.
Remote Port	0 is the default and signifies any port. Type a port number from 0 to 65535 in the **Start** and **End** fields. Some of the most common IP ports are: 21, FTP; 53, DNS; 23, Telnet; 80, HTTP; 25, SMTP; 110, POP3.
IPSec Proposal	
Encapsulation Mode	Select **Tunnel** mode or **Transport** mode.
Active Protocol	Select the security protocols used for an SA. Both **AH** and **ESP** increase the device's processing requirements and communications latency (delay).
Encryption Algorithm	When **DES** is used for data communications, both sender and receiver must know the same secret key, which can be used to encrypt and decrypt the message or to generate and verify a message authentication code. The DES encryption algorithm uses a 56-bit key. Triple DES (**3DES**) is a variation on DES that uses a 168-bit key. As a result, **3DES** is more secure than **DES**. It also requires more processing power, resulting in increased latency and decreased throughput. This implementation of **AES** uses a 128-bit key. **AES** is faster than **3DES**. Select **NULL** to set up a tunnel without encryption. When you select **NULL**, you do not enter an encryption key.
Authentication Algorithm	**MD5** (Message Digest 5) and **SHA1** (Secure Hash Algorithm) are hash algorithms used to authenticate packet data. The **SHA1** algorithm is generally considered stronger than **MD5**, but is slower. Select **MD5** for minimal security and **SHA-1** for maximum security.

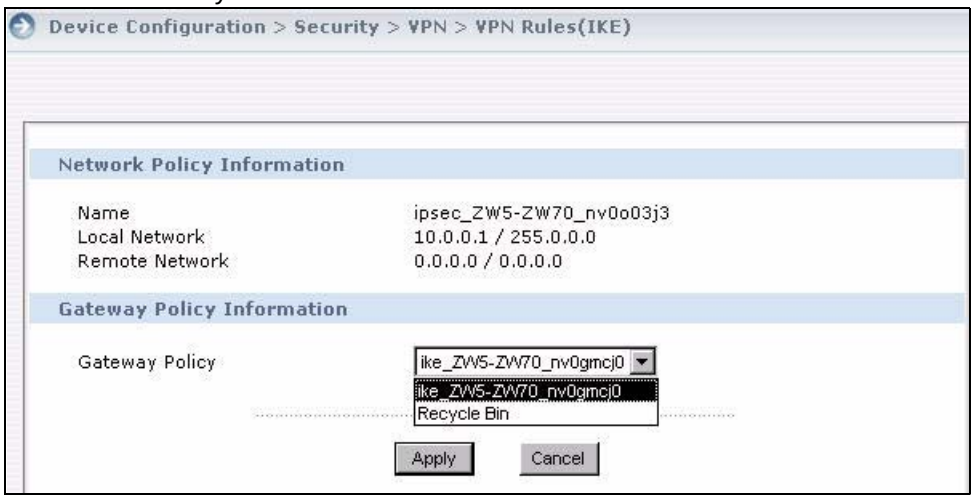
Table 49 Device Operation > Device Configuration > VPN > IKE IPSec (continued)

LABEL	DESCRIPTION
SA Life Time (Seconds)	Define the length of time before an IPSec SA automatically renegotiates in this field. The minimum value is 180 seconds. A short SA Life Time increases security by forcing the two VPN gateways to update the encryption and authentication keys. However, every time the VPN tunnel renegotiates, all users accessing remote resources are temporarily disconnected.
Perfect Forward Secret (PFS)	Perfect Forward Secret (PFS) is disabled (**NONE**) by default in phase 2 IPSec SA setup. This allows faster IPSec setup, but is not so secure. Select **DH1** or **DH2** to enable PFS. **DH1** refers to Diffie-Hellman Group 1 a 768 bit random number. **DH2** refers to Diffie-Hellman Group 2 a 1024 bit (1Kb) random number (more secure, yet slower).
Enable Replay Detection	As a VPN setup is processing intensive, the system is vulnerable to Denial of Service (DOS) attacks. The IPSec receiver can detect and reject old or duplicate packets to protect against replay attacks. Enable replay detection by selecting this check box.
Enable Multiple Proposals	Select this check box to allow the device to use any of its phase 1 or phase 2 encryption and authentication algorithms when negotiating an IPSec SA. When you enable multiple proposals, the device allows the remote IPSec router to select which encryption and authentication algorithms to use for the VPN tunnel, even if they are less secure than the ones you configure for the VPN rule. Clear this check box to have the device use only the phase 1 or phase 2 encryption and authentication algorithms configured below when negotiating an IPSec SA.
Apply	Click **Apply** to save the changes.
Cancel	Click **Cancel** to discard all changes and return to the main VPN screen.

6.3.4 VPN Rules (IKE) > Network Policy Move

In the **VPN Rule (IKE)** screen, click the move icon to display the screen shown next.Use this screen to associate a network policy to a gateway policy.

Figure 61 Device Operation > Device Configuration > Security > VPN > VPN Rules (IKE) > Network Policy Move



The following table describes the labels in this screen.

Table 50 Device Operation > Device Configuration > Security > VPN > VPN Rules (IKE) > Network Policy Move

LABEL	DESCRIPTION
Network Policy Information	The following fields display the general network settings of this VPN policy.
Name	This field displays the policy name.
Local Network	This field displays one or a range of IP address(es) of the computer(s) behind the Vantage CNM.
Remote Network	This field displays one or a range of IP address(es) of the remote network behind the remote IPsec router.
Gateway Policy Information	
Gateway Policy	Select the name of a VPN rule (or gateway policy) to which you want to associate this VPN network policy. If you do not want to associate a network policy to any gateway policy, select **Recycle Bin** from the drop-down list box. The **Recycle Bin** gateway policy is a virtual placeholder for any network policy(ies) without an associated gateway policy. When there is a network policy in **Recycle Bin**, the **Recycle Bin** gateway policy automatically displays in the **VPN Rules (IKE)** screen.
Apply	Click **Apply** to save the changes.
Cancel	Click **Cancel** to discard all changes and return to the main VPN screen.

6.3.5 VPN Rules (Manual)

Select a device, click **Device Operation** in the menu bar and then click **Device Configuration** > **Security** > **VPN** > **VPN Rules (Manual)** tab to open the VPN Rules screen. This is a read-only menu of your IPSec rules (tunnels). Edit an IPSec rule by clicking the edit icon to configure the associated submenus.

You may want to configure a VPN rule that uses manual key management if you are having problems with IKE key management.

Figure 62 Device Operation > Device Configuration > VPN > Manual-Key IPSec

Device Configuration > Security > VPN > VPN Rules(Manual)
VPN Rules(IKE)
VPN Rules(Manual)
Global Setting
Manual Key Rules
Page Size: 20
: Add : Edit : Remove
Name Active Local IP Address Remote IP Address Encap. IPSec Algorithm Remote Gateway Address
Total Records:0

The following table describes the labels in this screen.

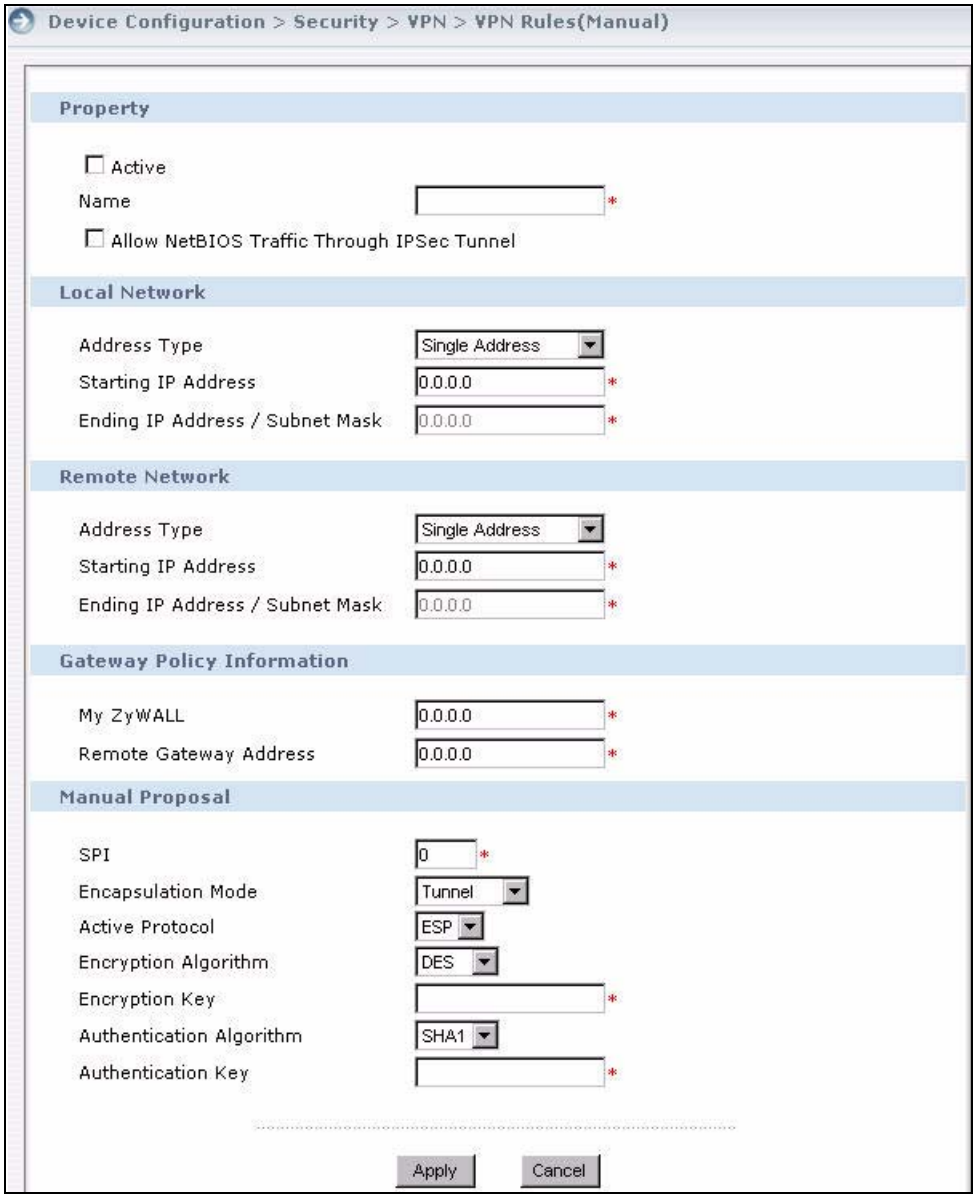
Table 51 Configuration > VPN > Manual-Key IPSec

LABEL	DESCRIPTION
#	This is the VPN policy index number.
Name	This field displays the identification name for this VPN policy. Click the hyperlink to edit the VPN policy.
Active	This field displays whether the VPN policy is active or not. A **true** signifies that this VPN policy is active; **false** signifies that this VPN policy is not active.
Local IP Address	This is the IP address(es) of computer(s) on your local network behind your device. The same (static) IP address is displayed twice when the **Local Network Address Type** field in the **VPN - Manual Key - Edit** screen is configured to **Single Address**. The beginning and ending (static) IP addresses, in a range of computers are displayed when the **Local Network Address Type** field in the **VPN - Manual Key - Edit** screen is configured to **Range Address**. A (static) IP address and a subnet mask are displayed when the **Local Network Address Type** field in the **VPN - Manual Key - Edit** screen is configured to **Subnet Address**.
Remote IP Address	This is the IP address(es) of computer(s) on the remote network behind the remote IPSec router. This field displays **N/A** when the **Remote Gateway Address** field displays **0.0.0.0**. In this case only the remote IPSec router can initiate the VPN. The same (static) IP address is displayed twice when the **Remote Network Address Type** field in the **VPN - Manual Key - Edit** screen is configured to **Single Address**. The beginning and ending (static) IP addresses, in a range of computers are displayed when the **Remote Network Address Type** field in the **VPN - Manual Key - Edit** screen is configured to **Range Address**. A (static) IP address and a subnet mask are displayed when the **Remote Network Address Type** field in the **VPN - Manual Key - Edit** screen is configured to **Subnet Address**.
Encap.	This field displays **Tunnel** or **Transport** mode (**Tunnel** is the default selection).
IPSec Algorithm	This field displays the security protocols used for an SA. Both **AH** and **ESP** increase device processing requirements and communications latency (delay).
Remote Gateway Address	This is the static WAN IP address or domain name of the remote IPSec router.
Add	Click **Add** to add a new VPN policy.
Edit	Click **Edit** to modify an existing VPN policy.
Remove	Select a policy and click **Remove** to delete the VPN policy. A window displays asking you to confirm that you want to delete the VPN rule. When a VPN policy is deleted, subsequent policies move up in the page list.

6.3.6 VPN Rules (Manual) > Add/Edit

Select **Manual** from Figure 60 on page 129 to proceed to the next screen.

Figure 63 Device Operation > Device Configuration > Security > VPN > VPN Rules (Manual) > Add/Edit



The following table describes the labels in this screen.

Table 52 Device Operation > Device Configuration > Security > VPN > VPN Rules (Manual) > Add/Edit

LABEL	DESCRIPTION
Property	
Active	Select this check box to activate this VPN policy.
Name	Type up to 32 characters to identify this VPN policy. You may use any character, including spaces, but the Vantage CNM drops trailing spaces.

Table 52 Device Operation > Device Configuration > Security > VPN > VPN Rules (Manual) > Add/Edit (continued)

LABEL	DESCRIPTION
Allow NetBIOS Traffic Through IPSec Tunnel	NetBIOS (Network Basic Input/Output System) are TCP or UDP packets that enable a computer to find other computers. It may sometimes be necessary to allow NetBIOS packets to pass through VPN tunnels in order to allow local computers to find computers on the remote network and vice versa. Select this check box to send NetBIOS packets through the VPN connection.
Local / Remote Network	Local / Remote IP addresses must be static and correspond to the remote IPSec router's configured remote IP addresses. Two active SAs cannot have the local and remote IP address(es) both the same. Two active SAs can have the same local or remote IP address, but not both. You can configure multiple SAs between the same local and remote IP addresses, as long as only one is active at any time.
Starting Address	When the **Address Type** field is configured to **Single**, enter a (static) IP address on the LAN behind the device. When the **Address Type** field is configured to **Range**, enter the beginning (static) IP address, in a range of computers on the LAN behind the device. When the **Address Type** field is configured to **Subnet**, this is a (static) IP address on the LAN behind the device.
Ending Address/Subnet Mask	When the **Address Type** field is configured to **Single**, this field is N/A. When the **Address Type** field is configured to **Range**, enter the end (static) IP address, in a range of computers on the LAN behind the device. When the **Address Type** field is configured to **Subnet**, this is a subnet mask on the LAN behind the device.
Gateway Policy Information	
My ZyWALL	This is the IP address of the local and remote computer(s) of the VPN tunnel.
Remote Gateway Address	Type the IP address of the computer with which you will make the VPN connection or leave the field blank to have the device automatically use the address in the **Secure Gateway** field.
Manual Proposal	
SPI	Type a number (base 10) from 1 to 999999 for the Security Parameter Index.
Encapsulation Mode	Select **Tunnel** mode or **Transport** mode from the drop-down list box.
Active Protocol	Select **ESP** if you want to use ESP (Encapsulation Security Payload). The ESP protocol (RFC 2406) provides encryption as well as some of the services offered by AH. If you select **ESP** here, you must select options from the **Encryption Algorithm** and **Authentication Algorithm** fields. Select **AH** if you want to use AH (Authentication Header Protocol). The AH protocol (RFC 2402) was designed for integrity, authentication, sequence integrity (replay resistance), and non-repudiation but not for confidentiality, for which the ESP was designed. If you select **AH** here, you must select options from the **Authentication Algorithm** field.

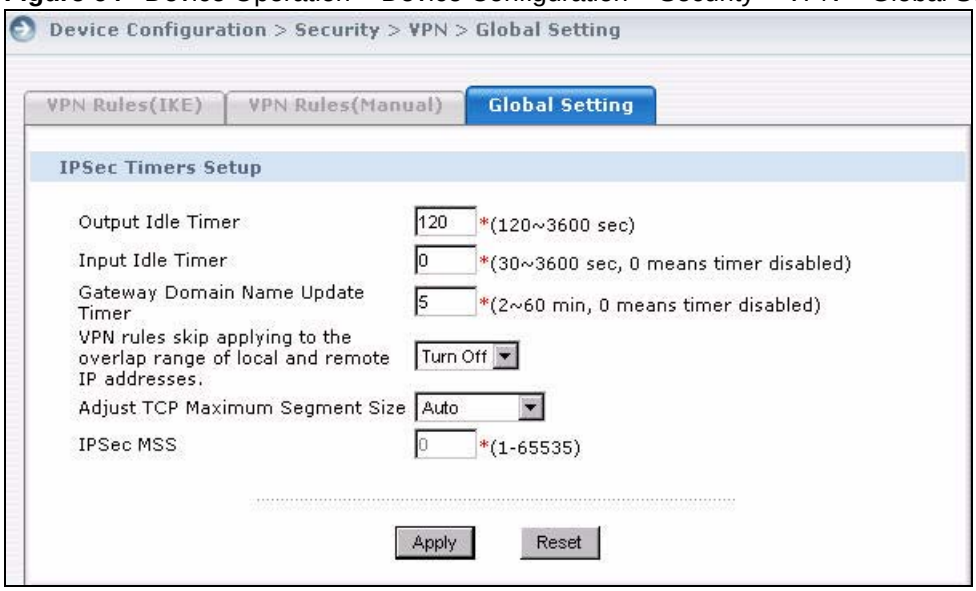
Table 52 Device Operation > Device Configuration > Security > VPN > VPN Rules (Manual) > Add/Edit (continued)

LABEL	DESCRIPTION
Encryption Algorithm	Select **DES**, **3DES** or **NULL** from the drop-down list box. When you use **DES** or **3DES**, both sender and receiver must know the **Encryption Key**, which can be used to encrypt and decrypt the messages. The DES encryption algorithm uses a 56-bit key. Triple DES (**3DES**) is a variation on DES that uses a 168-bit key. As a result, **3DES** is more secure than **DES**. It also requires more processing power, resulting in increased latency and decreased throughput. Select **NULL** to set up a tunnel without encryption. When you select **NULL**, you do not enter an encryption key.
Authentication Algorithm	When you use **SHA1** or **MD5**, both sender and receiver must know the **Authentication Key**, which can be used to generate and verify a message authentication code. Select **SHA1** or **MD5** from the drop-down list box. **MD5** (Message Digest 5) and **SHA1** (Secure Hash Algorithm) are hash algorithms used to authenticate packet data. The **SHA1** algorithm is generally considered stronger than **MD5**, but is slower. Select **MD5** for minimal security and **SHA-1** for maximum security.
Encryption Key	This field only applies when you select **ESP**. With **DES**, type a unique key 8 ASCII characters long. With **3DES**, type a unique key 24 ASCII characters long. Any characters may be used, including spaces, but trailing spaces are truncated.
Authentication Key	Type a unique authentication key to be used by IPSec if applicable. Enter 16 characters for **MD5** authentication or 20 characters for **SHA-1** authentication. Any characters may be used, including spaces, but trailing spaces are truncated.
Apply	Click **Apply** to save your changes back to the device.
Cancel	Click **Cancel** to begin configuring this screen afresh.

6.3.7 VPN Global Setting

Select a device, click **Device Operation** > **Device Configuration** > **Security** > **VPN** > **Global Setting** tab to open the screen shown next. Use this screen to change your device's global settings.

Figure 64 Device Operation > Device Configuration > Security > VPN > Global Setting



The following table describes the labels in this screen.

Table 53 Device Operation > Device Configuration > Security > VPN > Global Setting

LABEL	DESCRIPTION
Output Idle Timer	When traffic is sent to a remote IPSec router from which no reply is received after the specified time period, the device checks the VPN connectivity. If the remote IPSec router does not reply, the device automatically disconnects the VPN tunnel. Enter the time period (between 30 and 3600 seconds) to wait before the device checks all of the VPN connections to remote IPSec routers. Enter **0** to disable this feature.
Input Idle Timer	When no traffic is received from a remote IPSec router after the specified time period, the device checks the VPN connectivity. If the remote IPSec router does not reply, the device automatically disconnects the VPN tunnel. Enter the time period (between 30 and 3600 seconds) to wait before the device checks all of the VPN connections to remote IPSec routers. Enter **0** to disable this feature.
Gateway Domain Name Update Timer	This field is applicable when you enter a domain name to identify the device and/or the remote secure gateway. Enter the time period (between 2 and 60 minutes) to wait before the device updates the domain name and IP address mapping through a DNS server. The device rebuilds the VPN tunnel if it finds that the domain name is now using a different IP address (any users of the VPN tunnel will be temporarily disconnected). Enter **0** to disable this feature.
VPN rules skip applying to the overlap range of local and remote IP addresses	When you configure a VPN rule, the device checks to make sure that the IP addresses in the local and remote networks do not overlap. Select **Turn Off** box to disable the check if you need to configure a VPN policy with overlapping local and remote IP addresses. Note: If a VPN policy's local and remote IP addresses overlap, you may not be able to access the device on your LAN because the device automatically triggers a VPN tunnel to the remote device with the same IP address.

Table 53 Device Operation > Device Configuration > Security > VPN > Global Setting

LABEL	DESCRIPTION
Adjust TCP Maximum Segment Size	The TCP packets are larger after the device encrypts them for VPN. The device fragments packets that are larger than a connection's MTU (Maximum Transmit Unit). In most cases you should leave this set to **Auto**. The device automatically sets the Maximum Segment Size (MSS) of the TCP packets that are to be encrypted by VPN based on the encapsulation type. Select **Off** to not adjust the MSS for the encrypted TCP packets. If your network environment causes fragmentation issues that are affecting your throughput performance, you can manually set a smaller MSS for the TCP packets that are to be encrypted by VPN. Select **User Define**, and specify a size in the **IPSec MSS** field.
IPSec MSS	This field is enabled if **Adjust TCP Maximum Segment Size** is **User Define**. Specify the Maximum Segment Size (MSS) for the TCP packets that are to be encrypted by VPN. Specify a size from 0~1460 bytes. 0 has the device use the auto setting.
Apply	Click **Apply** to save your changes back to the device.
Reset	Click **Reset** to begin configuring this screen afresh.

6.4 Anti-Virus

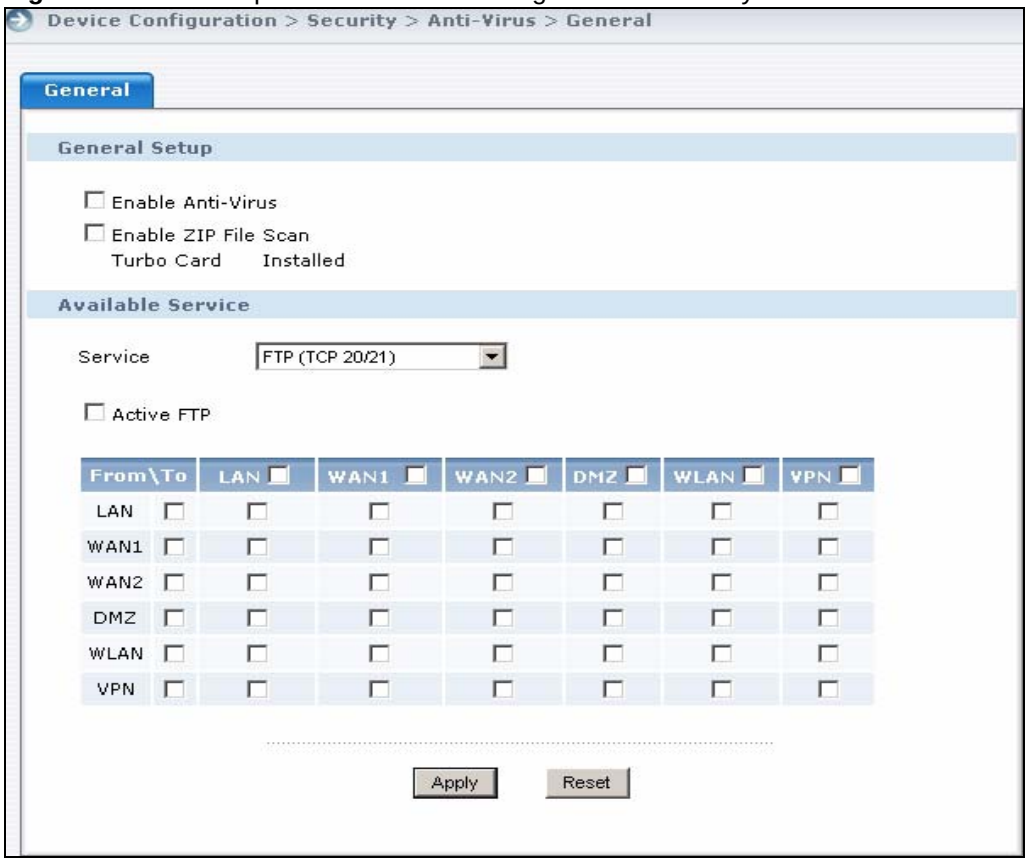
This section shows you how to configure the **Anti-Virus** screens. These screens may vary depending on which model you're configuring. Please see the device's User's Guide for more information about any of these screens or fields.

6.4.1 General Anti-Virus Setup

Click **Device Operation** in the menu bar and then click **Device Configuration** > **Security** > **Anti-Virus** > **General** in the navigation panel to display the configuration screen shown next.

Before you use the anti-virus feature, you must register for the service (refer to the chapter on registration for more information).

Figure 65 Device Operation > Device Configuration > Security > Anti-Virus > General



The following table describes the labels in this screen.

Table 54 Device Operation > Device Configuration > Security > Anti-Virus > General

LABEL	DESCRIPTION
General Setup	
Enable Anti-Virus	Select this check box to check traffic for viruses. The anti-virus scanner works on the following. FTP traffic using TCP ports 20 and 21 HTTP traffic using TCP ports 80, 8080 and 3128 POP3 traffic using TCP port 110 SMTP traffic using TCP port 25
Enable ZIP File Scan	Select this check box to have the device scan a ZIP file (with the “zip”, “gzip” or “gz” file extension). The device first decompresses the ZIP file and then scans the contents for viruses. Note: The device decompresses a ZIP file once. The device does NOT decompress any ZIP file(s) within the ZIP file.
Turbo Card	This field displays whether or not a device Turbo Card is installed. Note: You cannot configure and save the IDP and Anti-Virus screens if the device Turbo Card is not installed.
Available Service	
Service	This field displays the service names and standard port numbers that identify them. Select a service to display and configure anti-virus settings for it.

Table 54 Device Operation > Device Configuration > Security > Anti-Virus > General

LABEL	DESCRIPTION
Active	Select **Active** to enable the anti-virus scanner for the selected service.
From, To	Select the directions of travel of packets that you want to check. Select or clear a row or column's first check box (with the interface label) to select or clear the interface's whole row or column. For example, **From LAN To LAN** means packets traveling from a computer on one LAN subnet to a computer on another LAN subnet on the LAN interface of the device or the device itself. The device does not check packets traveling from a LAN computer to another LAN computer on the same subnet. **From VPN** means traffic that came into the device through a VPN tunnel and is going to the selected "to" interface. For example, **From VPN To LAN** specifies the VPN traffic that is going to the LAN or terminating at the device's LAN interface. The device checks the traffic after decrypting it. **To VPN** is traffic that comes in through the selected "from" interface and goes out through any VPN tunnel. For example, **From LAN To VPN** specifies the traffic that is coming from the LAN and going out through a VPN tunnel. The device checks the traffic before encrypting it. **From VPN To VPN** means traffic that comes in through a VPN tunnel and goes out through (another) VPN tunnel or terminates at the device. This is the case when the device is the hub in a hub-and-spoke VPN. This is also the case if you allow someone to use a service (like Telnet or HTTP) through a VPN tunnel to manage the device. The device checks the traffic after decrypting it (before encrypting it again). Note: The VPN connection directions apply to the traffic going to or from the device's VPN tunnels. They do not apply to other VPN traffic for which the device is not one of the gateways (VPN pass-through traffic).
Apply	Click **Apply** to save your changes.
Reset	Click **Reset** to start configuring this screen again.

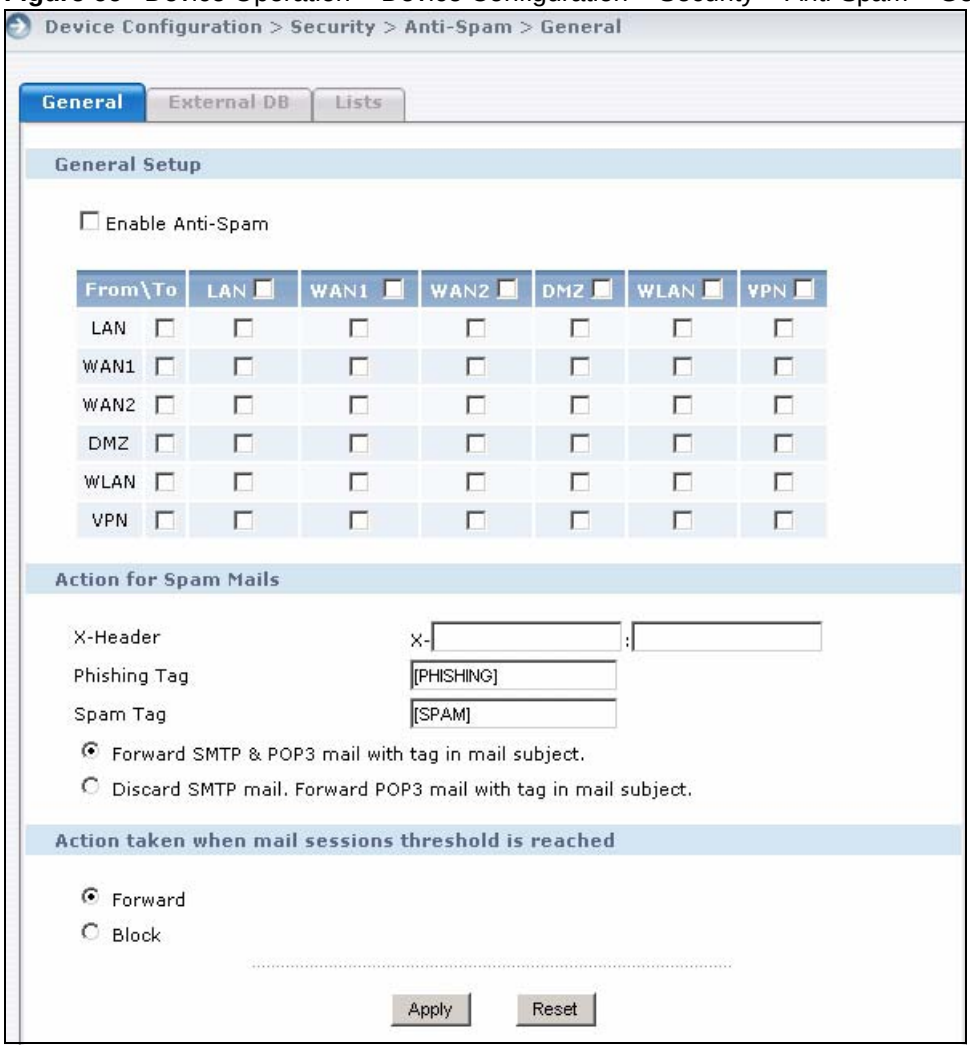
6.5 Anti-Spam

This section shows you how to configure the **Anti-Spam** screens. These screens may vary depending on which model you're configuring. Please see the device's User's Guide for more information about any of these screens or fields.

6.5.1 Anti-Spam General Screen

Click **Device Operation** in the menu bar and then click **Device Configuration** > **Security** > **Anti-Spam** > **General** in the navigation panel to open the **Anti-Spam General** screen. Use this screen to turn the anti-spam feature on or off and set how the device treats spam.

Figure 66 Device Operation > Device Configuration > Security > Anti-Spam > General



The following table describes the labels in this screen.

Table 55 Device Operation > Device Configuration > Security > Anti-Spam > General

LABEL	DESCRIPTION
General Setup	
Enable Anti-Spam	Select this check box to check traffic for spam SMTP (TCP port 25 and POP3 (TCP port 110) e-mail.

Table 55 Device Operation > Device Configuration > Security > Anti-Spam > General

LABEL	DESCRIPTION
From, To	Select the directions of travel of packets that you want to check. Select or clear a row or column's first check box (with the interface label) to select or clear the interface's whole row or column. For example, **From LAN To LAN** means packets traveling from a computer on one LAN subnet to a computer on another LAN subnet on the LAN interface of the device or the device itself. The device does not check packets traveling from a LAN computer to another LAN computer on the same subnet. **From VPN** means traffic that came into the device through a VPN tunnel and is going to the selected "to" interface. For example, **From VPN To LAN** specifies the VPN traffic that is going to the LAN or terminating at the device's LAN interface. The device checks the traffic after decrypting it. **To VPN** is traffic that comes in through the selected "from" interface and goes out through any VPN tunnel. For example, **From LAN To VPN** specifies the traffic that is coming from the LAN and going out through a VPN tunnel. The device checks the traffic before encrypting it. **From VPN To VPN** means traffic that comes in through a VPN tunnel and goes out through (another) VPN tunnel or terminates at the device. This is the case when the device is the hub in a hub-and-spoke VPN. This is also the case if you allow someone to use a service (like Telnet or HTTP) through a VPN tunnel to manage the device. The device checks the traffic after decrypting it (before encrypting it again). Note: The VPN connection directions apply to the traffic going to or from the device's VPN tunnels. They do not apply to other VPN traffic for which the device is not one of the gateways (VPN pass-through traffic).
Action for Spam Mails	Use this section to set how the device is to handle spam mail.
X-Header	An X-Header is a line (preceded by "X-") in the SMTP mail header. Enter an X-tag to insert into the X-header of mails that match a black list or are identified as spam by the anti-spam external database. You can enter up to 30 ASCII characters before the colon (:) and up to 47 ASCII characters after the colon (:). You can put any information as an X-tag or use "%status" and/or "%score". For example, if you enter "Mail status: %status %score", you may see "Mail status: SPAM 25" in the mail header. That means the mail is classified as spam and the spam score is 25.
Phishing Tag	Enter a message or label (up to 16 ASCII characters) to add to the mail subject of e-mails that the anti-spam external database classifies as phishing. Note: You must register for and enable the anti-spam external database feature in order for the device to use this tag (see the chapter on registration for details).
Spam Tag	Enter a message or label (up to 16 ASCII characters) to add to the mail subject of e-mails that the device classifies as spam.
Forward SMTP & POP3 mail with tag in mail subject	Select this radio button to have the device forward spam e-mail with the tag that you define. Even if you plan to use the discard option, you may want to use this initially as a test to check how accurate your anti-spam settings are. Check the e-mail the device forwards to you to make sure that unwanted e-mail is marked as spam and legitimate e-mail is not marked as spam.

Table 55 Device Operation > Device Configuration > Security > Anti-Spam > General

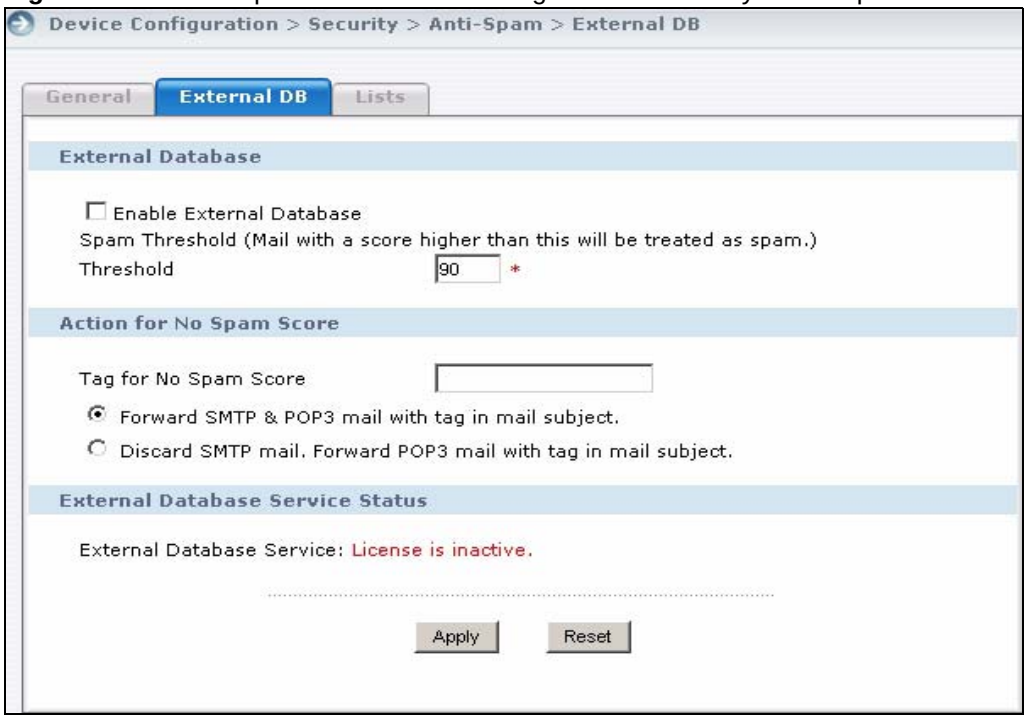
LABEL	DESCRIPTION
Discard SMTP mail. Forward POP3 mail with tag in mail subject	Select this radio button to have the device discard spam SMTP e-mail. The device will still forward spam POP3 e-mail with the tag that you define.
Action taken when mail sessions threshold is reached	The anti-spam feature limits the number of concurrent e-mail sessions. An e-mail session is when an e-mail client and e-mail server (or two e-mail servers) connect through the device. Use this section to configure what the device does when the number of concurrent e-mail sessions goes over the threshold (see the appendix of product specifications for the threshold). Select **Forward** to have the device allow the excess e-mail sessions without any spam filtering. Select **Block** to have the device drop mail connections to stop the excess e-mail sessions. The e-mail client or server will have to attempt to send or receive e-mail later when the number of e-mail sessions is under the threshold.
Apply	Click **Apply** to save your changes back to the device.
Reset	Click **Reset** to begin configuring this screen afresh.

6.5.2 Anti-Spam External DB Screen

Click **Device Operation** > **Device Configuration** > **Security** > **Anti-Spam** > **External DB** to display the **Anti-Spam External DB** screen.

Use this screen to enable or disable the use of the anti-spam external database. You can also configure the spam threshold and what to do when no valid spam score is received. You must register for this service before you can use it (see the chapter on registration for details).

Figure 67 Device Operation > Device Configuration > Security > Anti-Spam > External DB


Device Configuration > Security > Anti-Spam > External DB
General
External DB
Lists
External Database
Enable External Database
Spam Threshold (Mail with a score higher than this will be treated as spam.)
Threshold
90
*
Action for No Spam Score
Tag for No Spam Score
Forward SMTP & POP3 mail with tag in mail subject.
Discard SMTP mail, Forward POP3 mail with tag in mail subject.
External Database Service Status
External Database Service: License is inactive.
Apply
Reset

The following table describes the labels in this screen.

Table 56 Device Operation > Device Configuration > Security > Anti-Spam > External DB

LABEL	DESCRIPTION
External Database	
Enable External Database	Enable the anti-spam external database feature to have the device calculate a digest of an e-mail and send it to an anti-spam external database. The anti-spam external database sends a spam score for the e-mail back to the device.
Spam Threshold	The anti-spam external database checks an e-mail's digest and sends back a score that rates how likely the e-mail is to be spam. The possible range for the spam score is 0~100. The closer the score is to 100, the more likely the e-mail is to be spam. Set the spam threshold (from 0 to 100) for considering an e-mail to be spam. The device classifies any e-mail with a spam score greater than or equal to the threshold as spam. It classifies any e-mail with a spam score less than the threshold as not being spam. A lower threshold catches more spam e-mails, but may also classify more legitimate e-mail as spam. A higher threshold lessens the chance of classifying legitimate e-mail as spam, but may allow more spam to get through.
Action for No Spam Score	Use this field to configure what the device does if it does not receive a valid response from the anti-spam external database. If the device does not receive a response within seven seconds, it sends the e-mail digest a second time. If the device still does not receive a response after another seven seconds, it takes the action that you configure here. The device also takes this action if it receives an invalid response. Here are possible reasons that would cause the device to take this action: 1. The device was not able to connect to the anti-spam external database. 2. The device connected to the anti-spam external database, but there was no HTTP response within seven seconds. 3. The device received an error code from the anti-spam external database. 4. The device received an invalid spam score (for example a number higher than 100). 5. The device received an unknown response to the anti-spam query.
Tag for No Spam Score	Enter a message or label (up to 16 ASCII characters) to add to the mail subject of e-mails that it forwards if a valid spam score was not received within ten seconds.
Forward SMTP & POP3 mail with tag in mail subject	Select this radio button to have the device forward mail with the tag that you define.
Discard SMTP mail. Forward POP3 mail with tag in mail subject	Select this radio button to have the device discard SMTP mail. The device will still forward POP3 mail with the tag that you define.
External Database Service Status	This read-only field displays the status of your anti-spam external database service registration and activation. **License Inactive** displays if you have not successfully registered and activated the anti-spam external database service. **License Inactive** and the date your subscription expired display if your subscription to the anti-spam external database service has expired. **License Active** and the subscription expiration date display if you have successfully registered the device and activated the anti-spam external database service. **Trial Active** and the trial subscription expiration date display if you have successfully registered the device and activated the anti-spam external database service trial subscription.

Table 56 Device Operation > Device Configuration > Security > Anti-Spam > External DB

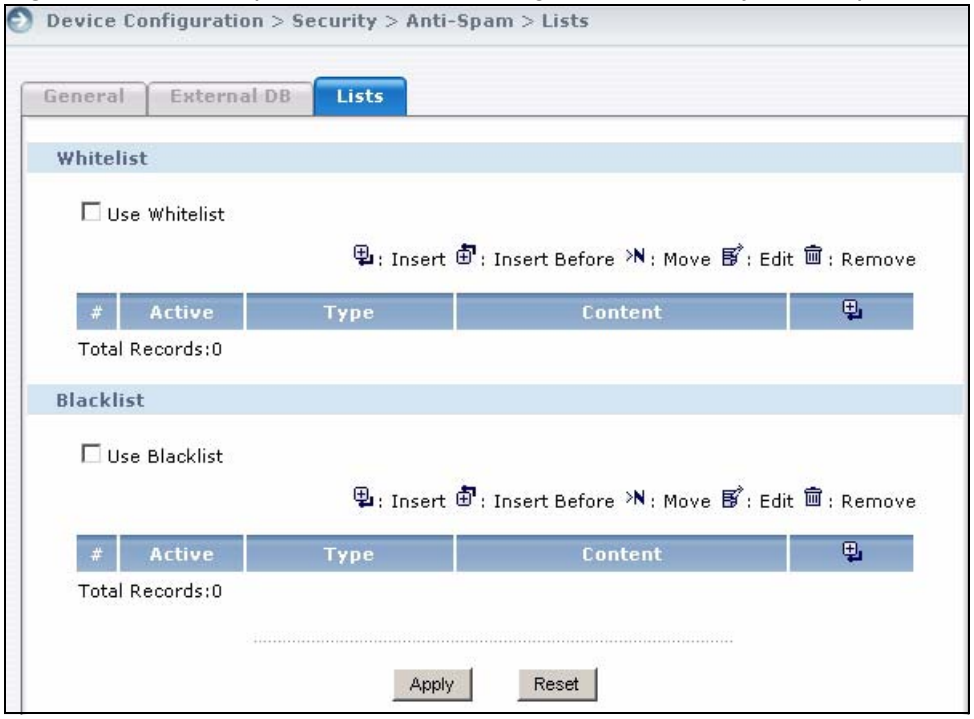
LABEL	DESCRIPTION
Apply	Click **Apply** to save your changes back to the device.
Reset	Click **Reset** to begin configuring this screen afresh.

6.6 Anti-Spam Lists Screen

Click **Device Operation** > **Device Configuration** > **Security** > **Anti-Spam** > **Lists** to display the **Anti-Spam Lists** screen.

Configure the whitelist to identify legitimate e-mail. Configure the blacklist to identify spam e-mail. You can create whitelist or blacklist entries based on the sender's IP address or e-mail address. You can also create entries that check for particular MIME headers, MIME header values or specific subject text.

Figure 68 Device Operation > Device Configuration > Security > Anti-Spam > Lists



The following table describes the labels in this screen.

Table 57 Device Operation > Device Configuration > Security > Anti-Spam > Lists

LABEL	DESCRIPTION
Whitelist	
Use Whitelist	Select this check box to have the device forward e-mail that matches a whitelist entry without doing any more anti-spam checking on that individual e-mail.
#	This field shows the index number of the entry.
Active	This field shows whether or not an entry is turned on.
Type	This field displays whether the entry is based on the e-mail's source IP address, source e-mail address, an MIME header or the e-mail's subject.

Table 57 Device Operation > Device Configuration > Security > Anti-Spam > Lists

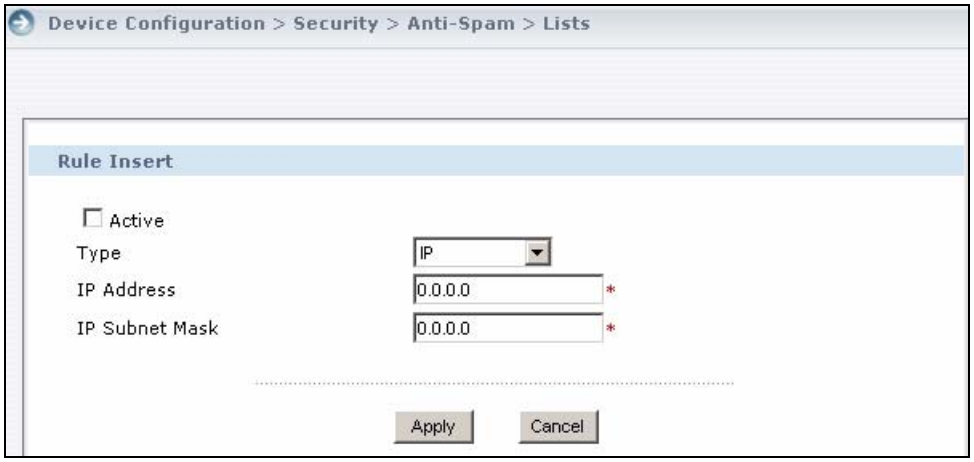
LABEL	DESCRIPTION
Content	This field displays the source IP address, source e-mail address, MIME header or subject content for which the entry checks.
Modify	Click the **Edit** icon to change the entry. Click the **Remove** icon to delete the entry. Click the **Move** icon to change the entry's position in the list.
Delete	Select the radio button next to an entry, and click **Delete** to remove the entry.
Insert	Type the index number where you want to put an entry. For example, if you type 6, your new entry becomes number 6 and the previous entry 6 (if there is one) becomes entry 7. Click **Insert** to display the screen where you edit an entry.
Blacklist	
Use Blacklist	Select this check box to have the device treat e-mail that matches a blacklist entry as spam.
#	This field shows the index number of the entry.
Active	This field shows whether or not an entry is turned on.
Type	This field displays whether the entry is based on the e-mail's source IP address, source e-mail address, an MIME header or the e-mail's subject.
Content	This field displays the source IP address, source e-mail address, MIME header or subject content for which the entry checks.
Modify	Click the **Edit** icon to change the entry. Click the **Remove** icon to delete the entry. Click the **Move** icon to change the entry's position in the list.
Delete	Select the radio button next to an entry, and click **Delete** to remove the entry.
Insert	Type the index number where you want to put an entry. For example, if you type 6, your new entry becomes number 6 and the previous entry 6 (if there is one) becomes entry 7. Click **Insert** to display the screen where you edit an entry.
Apply	Click **Apply** to save your changes back to the device.
Reset	Click **Reset** to begin configuring this screen afresh.

6.6.1 Anti-Spam Lists Edit Screen

To open this screen, click **Insert** or **Edit** in the **Device Operation** > **Device Configuration** > **Security** > **Anti-Spam** > **Lists** screen.

Use this screen to configure an anti-spam whitelist entry to identify legitimate e-mail or a blacklist entry to identify spam e-mail. You can create entries based on the sender's IP address or e-mail address. You can also create entries that check for particular MIME headers, MIME header values or specific subject text.

Figure 69 Device Operation > Device Configuration > Security > Anti-Spam > Lists > Add/Edit



The following table describes the labels in this screen.

Table 58 Device Operation > Device Configuration > Security > Anti-Spam > Lists > Add/Edit

LABEL	DESCRIPTION
Rule Edit	
Active	Turn this entry on to have the device use it as part of the whitelist or blacklist. You must also turn on the use of the corresponding list (in the **Anti-Spam Customization** screen) and the anti-spam feature (in the **Anti-Spam General** screen).
Type	Use this field to base the entry on the e-mail's source IP address, source e-mail address or an MIME header. Select **IP** to have the device check e-mail for a specific source IP address. You can create whitelist IP address entries for e-mail servers on your LAN or DMZ to speed up the device's processing of your outgoing e-mail. Select **E-Mail** to have the device check e-mail for a specific source e-mail address or domain name. You can create a whitelist entry for your company's domain name (or e-mail accounts) to speed up the device's processing of e-mail sent by your company's employees. Select **MIME Header** to have the device check e-mail for specific MIME headers or values. Configure blacklist MIME header entries to check for e-mail from bulk mail programs or that have content that are commonly used in spam. You can also configure whitelist MIME header entries to allow certain MIME headers or values that identify the e-mail as being from a trusted source. Select **Subject** to have the device check e-mail for specific content in the subject line.
IP Address	This field displays when you select the **IP** type. Enter an IP address in dotted decimal notation.
IP Subnet Mask	This field displays when you select the **IP** type. Enter the subnet mask here, if applicable.

Table 58 Device Operation > Device Configuration > Security > Anti-Spam > Lists > Add/Edit

LABEL	DESCRIPTION
E-Mail Address	This field displays when you select the **E-Mail** type. Enter an e-mail address or domain name (up to 63 ASCII characters). You can enter an individual e-mail address like abc@def.com. If you enter a domain name, the device searches the source e-mail address string after the “@” symbol to see if it matches the domain name. For example, you configure a entry with “def.com” as the domain name. E-mails sent from def.com e-mail addresses such as “abc@def.com” match the entry. E-mails sent from mail.def.com, such as abc@mail.def.com do not match the entry since “mail.def.com” does not match “def.com”. You can also use a wildcard (*). For example, if you configure *def.com, any e-mail address that ends in def.com matches. So “mail.def.com” matches. The wildcard can be anywhere in the text string and you can use more than one wildcard. You cannot use two wildcards side by side, there must be other characters between them. The device can check up to the first 63 characters of an e-mail’s address. The whitelist or blacklist check fails for addresses over 63 characters. However, a whitelist or blacklist entry that uses some text followed by a wildcard only requires the device to check the number of characters before the wildcard. So the check would still work for addresses longer than 63 characters. For example, if you used “abc*”, the device would only check up to the first three characters of the e-mail address.
Header	This field displays when you select the **MIME Header** type. Type the header part of an MIME header (up to 63 ASCII characters). In an MIME header, the header is the part that comes before the colon (:). For example, if you want the whitelist or blacklist entry to check for the MIME header “X-MSMail-Priority: Normal”, enter “X-MSMail-Priority” here as the MIME header.
Value	This field displays when you select the **MIME Header** type. Type the value part of an MIME header (up to 63 ASCII characters). In an MIME header, the part that comes after the colon is the value. For example, if you want the whitelist or blacklist entry to check for the MIME header “X-MSMail-Priority: Normal”, enter “Normal” here as the MIME value.
Subject	This field displays when you select the **Subject** type. Enter up to 63 ASCII characters of text to check for in the e-mail headers. Spaces are allowed. You can use a wildcard (*). For example, if you configure “*good”, any e-mail subject that ends in “good” matches. So “this is very good” and “this is not so good” both match. The wildcard can be anywhere in the text string and you can use more than one wildcard. You cannot use two wildcards side by side, there must be other characters between them. The device can check up to the first 63 characters of an e-mail’s subject. The whitelist or blacklist check fails for subjects over 63 characters. However, a whitelist or blacklist entry that uses some text followed by a wildcard only requires the device to check the number of characters before the wildcard. So the check would still work for subjects longer than 63 characters. For example, if you used “abc*”, the device would only check up to the first three characters of the e-mail subject.
Apply	Click **Apply** to save your settings and exit this screen.
Cancel	Click **Cancel** to exit this screen without saving.

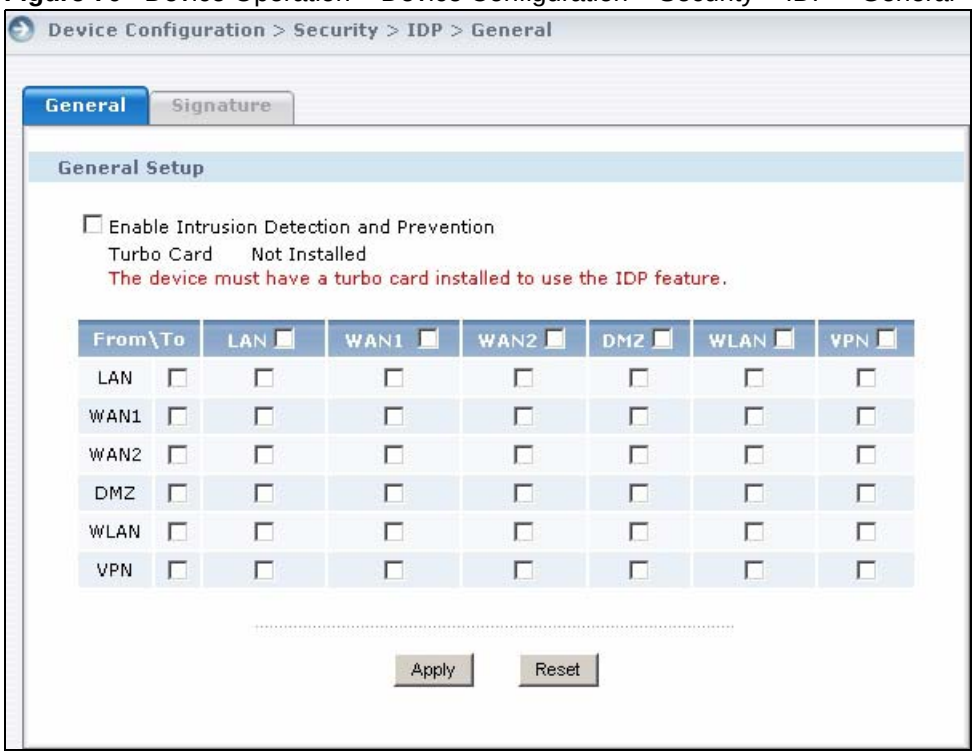
6.7 IDP

This section shows you how to configure the **IDP** screens. These screens may vary depending on which model you're configuring. Please see the device's User's Guide for more information about any of these screens or fields.

6.8 General Setup

Use this screen to enable IDP on the device and choose what interface(s) you want to protect from intrusions. To open this screen, click a device, click **Device Operation** in the menu bar and then click **Device Configuration** > **Security** > **IDP** > **General** in the navigation panel.

Figure 70 Device Operation > Device Configuration > Security > IDP > General



The following table describes the labels in this screen.

Table 59 Device Operation > Device Configuration > Security > IDP > General

LABEL	DESCRIPTION
General Setup	
Enable Intrusion Detection and Prevention	Select this check box to enable IDP on the device. When this check box is cleared the device is in IDP "bypass" mode and no IDP checking is done.
Turbo Card	This field displays whether or not a device's Turbo Card is installed. Note: You cannot configure and save the IDP or Anti-Virus screens if the device's Turbo Card is not installed.

Table 59 Device Operation > Device Configuration > Security > IDP > General (continued)

LABEL	DESCRIPTION
From, To	Select the check box to apply IDP to packets based on the direction of travel. Select or clear a row or column's first check box (with the interface label) to select or clear the interface's whole row or column. For example, **From LAN To LAN** means packets traveling from a computer on one LAN subnet to a computer on another LAN subnet on the LAN interface of the device or the device itself. The device does not check packets traveling from a LAN computer to another LAN computer on the same subnet. **From VPN** means traffic that came into the device through a VPN tunnel and is going to the selected "to" interface. For example, **From VPN To LAN** specifies the VPN traffic that is going to the LAN or terminating at the device's LAN interface. The device checks the traffic after decrypting it. **To VPN** is traffic that comes in through the selected "from" interface and goes out through any VPN tunnel. For example, **From LAN To VPN** specifies the traffic that is coming from the LAN and going out through a VPN tunnel. The device checks the traffic before encrypting it. **From VPN To VPN** means traffic that comes in through a VPN tunnel and goes out through (another) VPN tunnel or terminates at the device. This is the case when the device is the hub in a hub-and-spoke VPN. This is also the case if you allow someone to use a service (like Telnet or HTTP) through a VPN tunnel to manage the device. The device checks the traffic after decrypting it (before encrypting it again). Note: The VPN connection directions apply to the traffic going to or from the device's VPN tunnels. They do not apply to other VPN traffic for which the device is not one of the gateways (VPN pass-through traffic).
Apply	Click this button to save your changes back to the device.
Reset	Click this button to begin configuring this screen afresh.

6.9 IDP Signatures

The rules that define how to identify and respond to intrusions are called "signatures". Click **Device Operation** > **Device Configuration > Security > IDP** > **Signature** to see the device's signatures.

6.9.1 Attack Types

In the **Device Operation** > **Configuration > Security > IDP** > **Signature** screen, the **Attack Type** list box displays all intrusion types supported by the device. **Other** covers all intrusion types not covered by other types listed.

To see signatures for a specific intrusion type, select that type from the **Attack Type** list box.

Figure 71 Device Operation > Device Configuration > Security > IDP > Signature > Attack Types

The following table describes each attack type.

Table 60 Device Operation > Device Configuration > Security > IDP > Signature > Attack Types

TYPE	DESCRIPTION
DDoS	The goal of Denial of Service (DoS) attacks is not to steal information, but to disable a device or network on the Internet. A distributed denial-of-service (DDoS) attack is one in which multiple compromised systems attack a single target, thereby causing denial of service for users of the targeted system.
BufferOverflow	A buffer overflow occurs when a program or process tries to store more data in a buffer (temporary data storage area) than it was intended to hold. The excess information can overflow into adjacent buffers, corrupting or overwriting the valid data held in them. Intruders could run codes in the overflow buffer region to obtain control of the system, install a backdoor or use the victim to launch attacks on other devices.
AccessControl	Access control refers to procedures and controls that limit or detect access. Access control is used typically to control user access to network resources such as servers, directories, and files.
Scan	Scan refers to all port, IP or vulnerability scans. Hackers scan ports to find targets. They may use a TCP connect() call, SYN scanning (half-open scanning), Nmap etc. After a target has been found, a vulnerability scanner can be used to exploit exposures.
TrojanHorse	A Trojan horse is a harmful program that's hidden inside apparently harmless programs or data. It could be used to steal information or remotely control a device.
Other	This category refers to signatures for attacks that do not fall into the previously mentioned categories.
P2P	Peer-to-peer (P2P) is where computing devices link directly to each other and can directly initiate communication with each other; they do not need an intermediary. A device can be both the client and the server. In the device, P2P refers to peer-to-peer applications such as eMule, eDonkey, BitTorrent, iMesh etc.
IM	IM (Instant Messaging) refers to chat applications. Chat is real-time communication between two or more users via networks-connected computers. After you enter a chat (or chat room), any member can type a message that will appear on the monitors of all the other participants.

Table 60 Device Operation > Device Configuration > Security > IDP > Signature > Attack Types (continued)

TYPE	DESCRIPTION
VirusWorm	A computer virus is a small program designed to corrupt and/or alter the operation of other legitimate programs. A worm is a program that is designed to copy itself from one computer to another on a network. A worm's uncontrolled replication consumes system resources thus slowing or stopping other tasks. The IDP VirusWorm category refers to network-based viruses and worms. The Anti-Virus (AV) screen refers to file-based viruses and worms. Refer to the anti-virus chapter for additional information on file-based anti-virus scanning in the device.
Porn	The device can block web sites if their URLs contain certain pornographic words. It cannot block web pages containing those words if the associated URL does not.
WebAttacks	Web attack signatures refer to attacks on web servers such as IIS (Internet Information Services).
SPAM	Spam is unsolicited "junk" e-mail sent to large numbers of people to promote products or services. Refer to the anti-spam chapter for more detailed information.

6.9.2 Intrusion Severity

Intrusions are assigned a severity level based on the following table. The intrusion severity level then determines the default signature action.

Table 61 Device Operation > Device Configuration > Security > IDP > Signature > Intrusion Severity

SEVERITY	DESCRIPTION
Severe	These are intrusions that try to run arbitrary code or gain system privileges.
High	These are known serious vulnerabilities or intrusions that are probably not false alarms.
Medium	These are medium threats, access control intrusions or intrusions that could be false alarms.
Low	These are mild threats or intrusions that could be false alarms.
Very Low	These are possible intrusions caused by traffic such as Ping, trace route, ICMP queries etc.

6.9.3 Signature Actions

You can enable/disable individual signatures. You can log and/or have an alert sent when traffic meets a signature criteria. You can also change the default action to be taken when a packet or stream matches a signature. The following figure and table describes these actions. Note that in addition to these actions, a log may be generated or an alert sent, if those check boxes are selected and the signature is enabled.

Figure 72 Device Operation > Device Configuration > Security > IDP > Signature > Actions

The following table describes signature actions.

Table 62 Device Operation > Device Configuration > Security > IDP > Signature > Actions

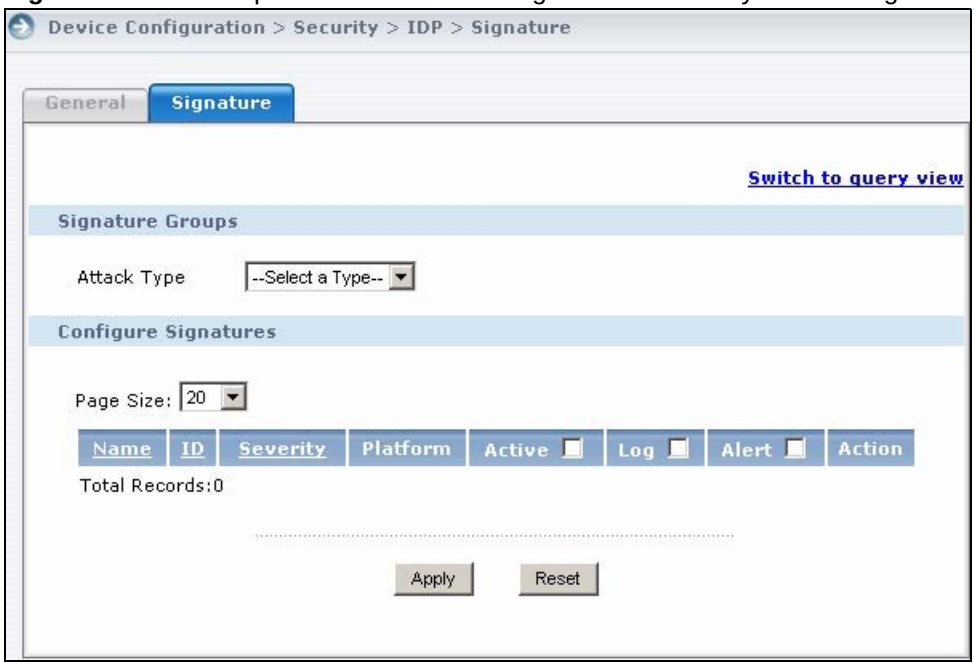
ACTION	DESCRIPTION
No Action	The intrusion is detected but no action is taken.
Drop Packet	The packet is silently discarded.
Drop Session	When the firewall is enabled, subsequent TCP/IP packets belonging to the same connection are dropped. Neither sender nor receiver are sent TCP RST packets. If the firewall is not enabled only the packet that matched the signature is dropped.
Reset Sender	When the firewall is enabled, the TCP/IP connection is silently torn down. Just the sender is sent TCP RST packets. If the firewall is not enabled only the packet that matched the signature is dropped.
Reset Receiver	When the firewall is enabled, the TCP/IP connection is silently torn down. Just the receiver is sent TCP RST packets. If the firewall is not enabled only the packet that matched the signature is dropped.
Reset Both	When the firewall is enabled, the TCP/IP connection is silently torn down. Both sender and receiver are sent TCP RST packets. If the firewall is not enabled only the packet that matched the signature is dropped.

6.9.4 Configuring IDP Signatures

Use this screen to see the device's "group view" signature screen where you can view signatures by attack type. To search for signatures based on other criteria such as signature name or ID, then click the **Switch to query view** link to go to the "query view" screen.

You can take actions on these signatures as described in Section 6.9.3 on page 154. To revert to the default actions or to save sets of actions, go to the **Device Operation** > **Configuration Management** > **Signature Profile Management** > **Reset to Factory** or **Backup & Restore** screen.

Figure 73 Device Operation > Device Configuration > Security > IDP > Signature



The following table describes the labels in this screen.

Table 63 Device Operation > Device Configuration > Security > IDP > Signature

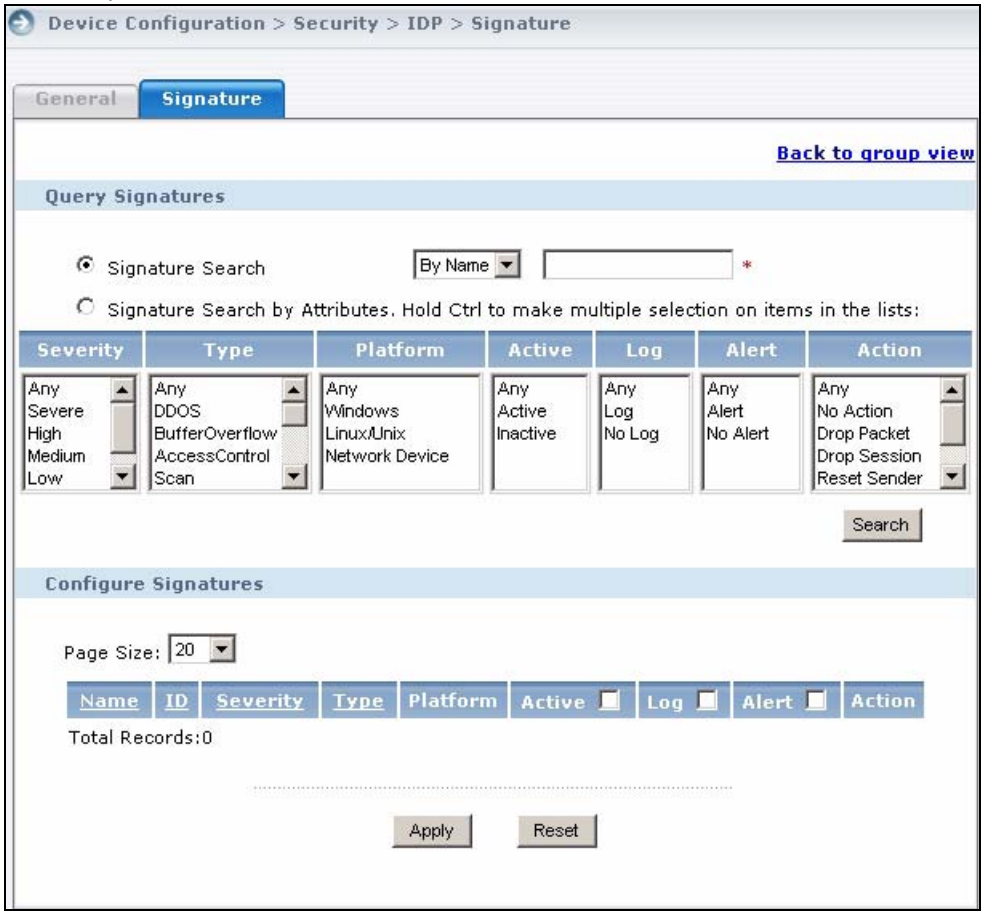
LABEL	DESCRIPTION
Switch to query view	Click this hyperlink to go to a screen where you can search for signatures based on criteria other than attack type.
Attack Type	Select the type of signatures you want to view from the list box. See Section 6.9.1 on page 152 for information on types of signatures. The table displays the signatures of the type that you selected. Click a column's header to sort the entries by that attribute.
Name	The (read-only) signature name identifies a specific signature targeted at a specific intrusion. Click the hyperlink for more detailed information on the intrusion.
ID	Each intrusion has a unique identification number. This number may be searched at myZyXEL.com for more detailed information.
Severity	This field displays the level of threat that the intrusion may pose. See Table 61 on page 154 for more information on intrusion severity.
Platform	This field displays the computer or network device operating system that the intrusion targets or is vulnerable to the intrusion. These icons represent a Windows operating system, a UNIX-based operating system and a network device, respectively.
Active	Select the check box in the heading row to automatically select all check boxes and enable all signatures. Clear it to clear all entries and disable all signatures on the current page. For example, you could clear all check boxes for signatures that targets operating systems not in your network. This would speed up the IDP signature checking process. Alternatively, you may select or clear individual entries. The check box becomes gray when you select the check box. If you edited any of the check boxes in this column on the current page, use the check box in the heading row to switch between the settings (last partial edited, all selected and all cleared).
Log	Select this check box to have a log generated when a match is found for a signature. Select the check box in the heading row to automatically select all check boxes or clear it to clear all entries on the current page. Alternatively, you may select or clear individual entries. The check box becomes gray when you select the check box. If you edited any of the check boxes in this column on the current page, use the check box in the heading row to switch between the settings (last partial edited, all selected and all cleared).
Alert	You can only edit the **Alert** check box when the corresponding **Log** check box is selected. Select this check box to have an e-mail sent when a match is found for a signature. Select the check box in the heading row to automatically select all check boxes or clear it to clear all entries on the current page. Alternatively, you may select or clear individual entries. The check box becomes gray when you select the check box. If you edited any of the check boxes in this column on the current page, use the check box in the heading row to switch between the settings (last partial edited, all selected and all cleared).
Action	You can change the default signature action here. See Table 62 on page 155 for more details on actions.
Apply	Click this button to save your changes back to the device.
Reset	Click this button to begin configuring this screen afresh.

6.9.5 Query View

Use this screen to see the device's "group view" signature screen, then click the **Switch to query view** link to go to this 'query view" screen.

Use this screen to search for signatures by criteria such as name, ID, severity, attack type, vulnerable attack platforms, whether or not they are active, log options, alert options or actions.

Figure 74 Device Operation > Device Configuration > Security > IDP > Signature (Query View)



The following table describes the fields in this screen.

Table 64 Device Operation > Device Configuration > Security > IDP > Signature (Query View)

LABEL	DESCRIPTION
Back to group view	Click this button to go to the IDP group view screen where IDP signatures are grouped by attack type.
Signature Search	Select this to search for a specific signature name or ID (that you already know). Then select whether to search the signatures by name or ID. Then enter the name (or part of the name) or the complete ID number of the signature(s) that you want to find. Note: A partial name may be searched but a complete ID number must be entered before a match can be found.

Table 64 Device Operation > Device Configuration > Security > IDP > Signature (Query View) (continued)

LABEL	DESCRIPTION
Signature Search by Attributes	Select this to search for signatures that match the criteria that you specify. Then select the criteria to search for. Hold down the [Ctrl] key if you want to make multiple selections from a list of attributes.
Severity	Search for signatures by severity level(s) (see Table 61 on page 154).
Type	Search for signatures by attack type(s) (see Table 60 on page 153). Attack types are known as policy types in the group view screen.
Platform	Search for signatures created to prevent intrusions targeting specific operating system(s).
Active	Search for enabled and/or disabled signatures here.
Log	Search for signatures by log option here.
Alert	Search for signatures by alert option here.
Action	Search for signatures by the response the device takes when a packet matches a signature. See Table 62 on page 155 for action details.
Search	Click this button to begin the search. The results display at the bottom of the screen. Results may be spread over several pages depending on how broad the search criteria selected were. The tighter the criteria selected, the fewer the signatures returned.
Configure Signatures	The results display in a table showing the criteria as selected in the search. Click a column's header to sort the entries by that attribute.
Name	The (read-only) signature name identifies a specific signature targeted at a specific intrusion. Click the hyperlink for more detailed information on the intrusion.
ID	Each intrusion has a unique identification number. This number may be searched at myZyXEL.com for more detailed information.
Severity	This field displays the level of threat that the intrusion may pose. See Table 61 on page 154 for more information on intrusion severity.
Type	This field displays the what type of signature each one is. See Section 6.9.1 on page 152 for information on types of signatures.
Platform	This field displays the computer or network device operating system that the intrusion targets or is vulnerable to the intrusion. These icons represent a Windows operating system, a UNIX-based operating system and a network device, respectively.
Active	Select the check box in the heading row to automatically select all check boxes and enable all signatures. Clear it to clear all entries and disable all signatures on the current page. For example, you could clear all check boxes for signatures that targets operating systems not in your network. This would speed up the IDP signature checking process. Alternatively, you may select or clear individual entries. The check box becomes gray when you select the check box. If you edited any of the check boxes in this column on the current page, use the check box in the heading row to switch between the settings (last partial edited, all selected and all cleared).

Table 64 Device Operation > Device Configuration > Security > IDP > Signature (Query View) (continued)

LABEL	DESCRIPTION
Log	Select this check box to have a log generated when a match is found for a signature. Select the check box in the heading row to automatically select all check boxes or clear it to clear all entries on the current page. Alternatively, you may select or clear individual entries. The check box becomes gray when you select the check box. If you edited any of the check boxes in this column on the current page, use the check box in the heading row to switch between the settings (last partial edited, all selected and all cleared).
Alert	You can only edit the **Alert** check box when the corresponding **Log** check box is selected. Select this check box to have an e-mail sent when a match is found for a signature. Select the check box in the heading row to automatically select all check boxes or clear it to clear all entries on the current page. Alternatively, you may select or clear individual entries. The check box becomes gray when you select the check box. If you edited any of the check boxes in this column on the current page, use the check box in the heading row to switch between the settings (last partial edited, all selected and all cleared).
Action	You can change the default signature action here. See Table 62 on page 155 for more details on actions.
Apply	Click this button to save your changes back to the device.
Reset	Click this button to begin configuring this screen afresh.

6.10 Signature Update

The device comes with built-in signatures created by the ZyXEL Security Response Team (ZSRT). These are regularly updated as new intrusions evolve. Use the **Update** screen to immediately download or schedule new signature downloads.

You should have already registered the device at myZyXEL.com (http://www.myzyxel.com/myzyxel/) and also have either activated the trial license or standard license (iCard). If your license has expired, you will have to renew it before updates are allowed.

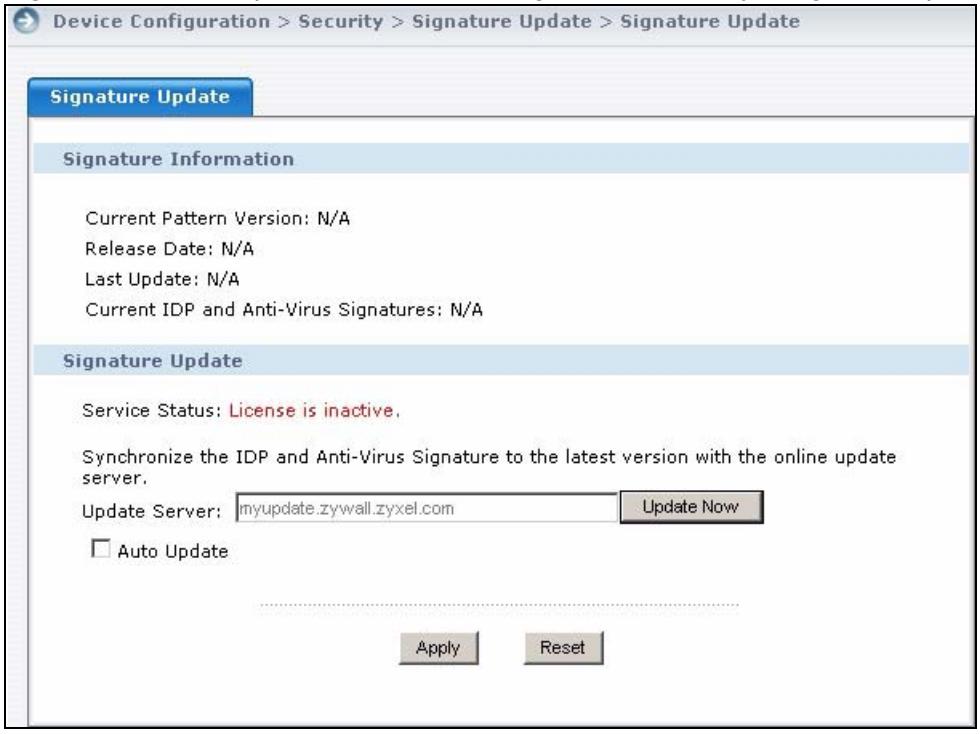
When scheduling signature updates, you should choose a day and time when your network is least busy so as to minimize disruption to your network. Your custom signature configurations are not over-written when you download new signatures.

File-based anti-virus signatures (see the anti-virus chapter) are included with IDP signatures. When you download new signatures using the anti-virus **Update** screen, IDP signatures are also downloaded. The version number changes both in the anti-virus **Update** screen and this screen. Both screens also share the same **Auto-Update** schedule. Changes made to the schedule in one screen are reflected in the other.

The device does not have to reboot when you upload new signatures.

To open this screen, click **Device Operation** in the menu bar and then click **Device Configuration** > **Security** > **Signature Update** in the configuration panel.

Figure 75 Device Operation > Device Configuration > Security > Signature Update



The following table describes the labels in this screen.

Table 65 Device Operation > Device Configuration > Security > Signature Update

LABEL	DESCRIPTION
Signature Information	
Current Pattern Version	This field displays the signatures version number currently used by the device. This number is defined by the ZyXEL Security Response Team (ZSRT) who maintain and update them. This number increments as new signatures are added, so you should refer to this number regularly. Go to https://mysecurity.zyxel.com/mysecurity/ to see what the latest version number is. You can also subscribe to signature update e-mail notifications.
Release Date	This field displays the time (hour, minutes second) and date (month, date, year) that the above signature set was created.

Table 65 Device Operation > Device Configuration > Security > Signature Update

LABEL	DESCRIPTION
Last Update	This field displays the last date and time you downloaded new signatures to the device. It displays **N/A** if you have not downloaded any new signatures yet.
Current IDP Signatures	This field displays the number of IDP-related signatures.
Signature Update	
Service Status	This field displays **License Inactive** if you have not yet activated your trial or iCard license at myZyXEL.com. It displays **License Inactive** and an expiration date if your trial or iCard license has expired (the expiration date is the date it expired). It displays **Trial Active** and an expiration date when you have activated your trial license. It displays **License Active** and an expiration date when you have activated your iCard license (the expiration date is the date it will expire).
Update Server	This is the URL of the signature server from which you download signatures.
Update Now	Click this button to begin downloading signatures from the **Update Server** immediately.
Auto Update	Select the check box to configure a schedule for automatic signature updates. The **Hourly**, **Daily** and **Weekly** fields display when the check box is selected. The device then automatically downloads signatures from the **Update Server** regularly at the time and/or day you specify.
Hourly	Select this option to have the device check the update server for new signatures every hour. This may be advisable when new intrusions are currently spreading throughout the Internet.
Daily	Select this option to have the device check the update server for new signatures every day at the hour you select from the list box. The device uses a 24-hour clock. For example, choose **15** from the list box to have the device check the update server for new signatures at 3 PM every day.
Weekly	Select this option to have the device check the update server for new signatures once a week on the day and hour you select from the list boxes. The device uses a 24-hour clock, so for example, choose **Wednesday** and **15** from the respective list boxes to have the device check the update server for new signatures at 3PM every Wednesday.
Apply	Click this button to save your changes back to the device.
Reset	Click this button to close this screen without saving any changes.

6.11 Content Filter

This section shows you how to configure the **Content Filter** screens. These screens may vary depending on which model you're configuring. Please see the device's User's Guide for more information about any of these screens or fields.

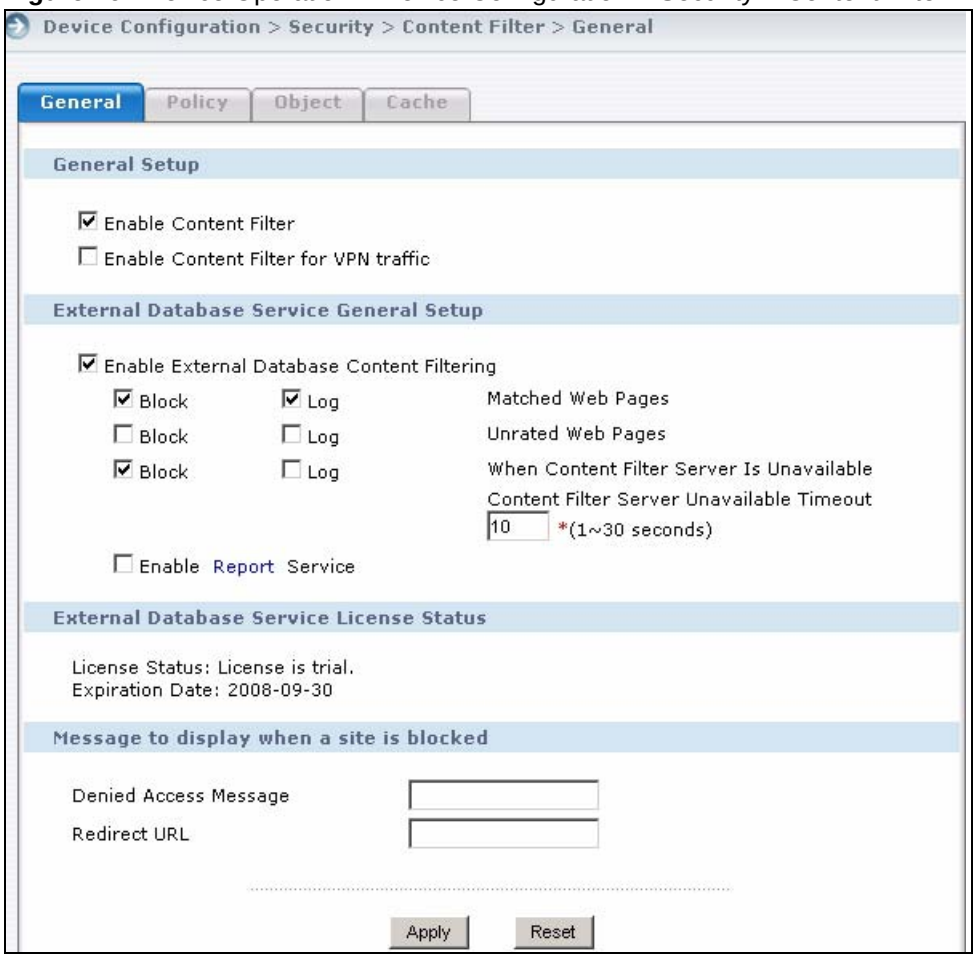
6.12 Content Filter General Screen

Click **Device Operation** in the menu bar and then click **Device Configuration** > **Security** > **Content Filter** > **General** in the navigation panel to open the **General** screen.

Content filtering allows you to block certain web features, such as Cookies, and/or block access to specific websites.

Use this screen to enable content filtering, configure a schedule, and create a denial message. You can also choose specific computers to be included in or excluded from the content filtering configuration.

Figure 76 Device Operation > Device Configuration > Security > Content Filter > General



The following table describes the labels in this screen.

Table 66 Device Operation > Device Configuration > Security > Content Filter > General

LABEL	DESCRIPTION
General Setup	
Enable Content Filter	Select this check box to enable the content filter. Content filtering works on HTTP traffic that is using TCP ports 80, 119, 3128 or 8080.

Table 66 Device Operation > Device Configuration > Security > Content Filter > General

LABEL	DESCRIPTION
Enable Content Filter for VPN traffic	Select this check box to have the content filter apply to traffic that the device sends out through a VPN tunnel or receives through a VPN tunnel. The device applies the content filter to the traffic before encrypting it or after decrypting it. Note: The device can apply content filtering on the traffic going to or from the device's VPN tunnels. It does not apply to other VPN traffic for which the device is not one of the gateways (VPN pass-through traffic).
External Database Service General Setup	The external database content filtering service has the Vantage CNM check an external database to find to which category a requested web page belongs.
Enable External Database Content Filtering	Turn on external database content filtering to have the Vantage CNM block or forward access to web pages depending on the Vantage CNM's external database content filtering settings.
Matched Web Pages	Select **Block** to prevent users from accessing web pages that match the categories that you select below. When external database content filtering blocks access to a web page, it displays the denied access message that you configured in the **CONTENT FILTER General** screen along with the category of the blocked web page. Select **Log** to record attempts to access prohibited web pages.
Unrated Web Pages	Select **Block** to prevent users from accessing web pages that the external database content filtering has not categorized. When the external database content filtering blocks access to a web page, it displays the denied access message that you configured in the **CONTENT FILTER General** screen along with the category of the blocked web page. Select **Log** to record attempts to access web pages that are not categorized.
When Content Filter Server Is Unavailable	Select **Block** to block access to any requested web page if the external content filtering database is unavailable. The following are possible causes: There is no response from the external content filtering server within the time period specified in the **Content Filter Server Unavailable Timeout** field. The Vantage CNM is not able to resolve the domain name of the external content filtering database. There is an error response from the external content filtering database. This can be caused by an expired content filtering registration (External content filtering's license key is invalid"). Select **Log** to record attempts to access web pages that occur when the external content filtering database is unavailable.
Content Filter Server Unavailable Timeout	Specify a number of seconds (1 to 30) for the Vantage CNM to wait for a response from the external content filtering server. If there is still no response by the time this period expires, the Vantage CNM blocks or allows access to the requested web page based on the setting in the **Block When Content Filter Server Is Unavailable** field.

Table 66 Device Operation > Device Configuration > Security > Content Filter > General

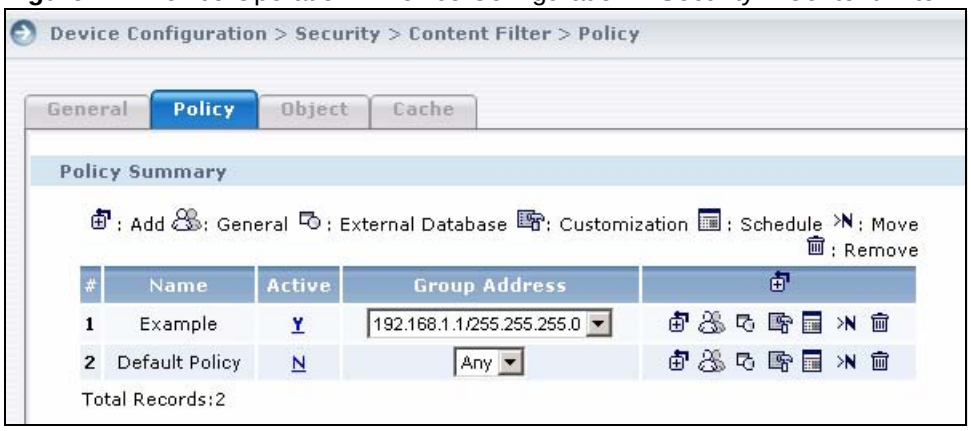
LABEL	DESCRIPTION
Enable Report Service	Select this option to record content filtering reports on myZyXEL.com. These reports consist of generated statistics and charts of access attempts to web sites belonging to the categories you selected in your content filter configuration. Click **Report** to go to myZyXEL.com. Then do the following to view the content filtering reports. 1. Log into myZyXEL.com and click your device's link to open it's **Service Management** screen. 2. Click **Content Filter** in the **Service Name** field to open the Blue Coat login screen. 3. Enter your Vantage CNM's MAC address (in lower case) in the **Name** field. You can find this MAC address in the **Service Management** screen. Type your myZyXEL.com account password in the **Password** field and click **Submit**.
External Database Service License Status	
License Status	This read-only field displays the status of your category-based content filtering (using an external database) service subscription. **License Inactive** displays if you have not registered and activated the category-based content filtering service. **License Active** and the subscription expiration date display if you have registered the Vantage CNM and activated the category-based content filtering service. **Trial Active** and the trial subscription expiration date display if you have registered the Vantage CNM and activated the category-based content filtering service. **License Inactive** and the date your subscription expired display if your subscription to the category-based content filtering service has expired. Note: After you register for content filtering, you need to wait up to five minutes for content filtering to be activated.
Message to display when a site is blocked	
Denied Access Message	Enter a message to be displayed when a user tries to access a restricted web site. The default message is "Please contact your network administrator!".
Redirect URL	Enter the URL of the web page to which you want to send users when their web access is blocked by content filtering. The web page you specify here opens in a new frame below the denied access message. Use "http://" followed by up to 120 ASCII characters. For example, http://192.168.1.17/blocked access. If you do not specify a URL and a user tries to access a web page containing a forbidden object, a blocking page displays on the forbidden object.
Apply	Click **Apply** to save your changes back to the device.
Reset	Click **Reset** to begin configuring this screen afresh.

6.13 Content Filter Policy

This screen lists groups of content filtering settings called policies. Content filtering policies allow you to have different content filtering settings for different users or groups of users. For example, you may want to block most employees from accessing finance or stock websites, but allow the finance department to access these. You can set the ZyWALL to use external database content filtering and select which web site categories to block and/or log.

To open this screen, click a device, click **Device Operation** in the menu bar and then click **Device Configuration** > **Content Filter** > **Policy** in the navigation panel.

Figure 77 Device Operation > Device Configuration > Security > Content Filter > Policy



The following table describes the labels in this screen.

Table 67 Device Operation > Device Configuration > Security > Content Filter > Policy

LABEL	DESCRIPTION
#	
Name	This is the name of the content filter policy.
Active	This field displays whether a content filter policy is turned on (**Y**) or not (**N**). Click the setting to change it.
Global Address	This drop-down list box displays the source (user) addresses or ranges of addresses to which the content filter policy applies. Please note that a blank source or destination address is equivalent to **Any**.
Add	Click this to add a new content filtering policy.
General	Click the general icon to edit the source (user) addresses or ranges of addresses to which the content filter policy applies. You cannot edit this for the default policy.
External Database	Click the external database icon to edit which web features and content categories the content filter policy blocks.
Customization	Click the customization icon to configure the policy's list of good (allowed) web site addresses and a list of bad (blocked) web site addresses. You can also block web sites based on whether the web site's address contains a keyword.

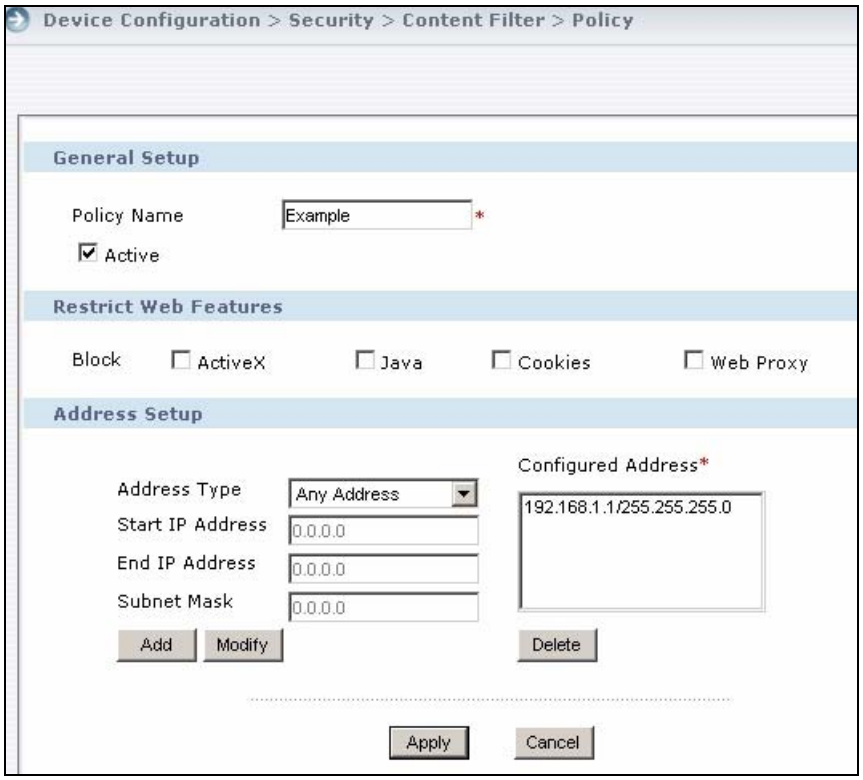
Table 67 Device Operation > Device Configuration > Security > Content Filter > Policy

LABEL	DESCRIPTION
Schedule	Click the schedule icon to set for which days and times the policy applies. Click the delete icon to remove the content filter policy. You cannot delete the default policy. A window display asking you to confirm that you want to delete the policy. Note that subsequent policies move up by one when you take this action.
Move	Click **Move** and type the content filter policy's index number for where you want to put that policy. The ordering of your policies is important as they are applied in order of their numbering.
Remove	Click the delete icon to remove the content filter policy. You cannot delete the default policy. A window display asking you to confirm that you want to delete the policy. Note that subsequent policies move up by one when you take this action.

6.13.1 Content Filter Policy: General

To open this screen, click **Add** or a policy's general icon in the **Device Operation** > **Device Configuration** > **Security** > **Content Filter** > **Policy** screen. Use this screen to restrict web features and edit the source (user) addresses or ranges of addresses to which the content filter policy applies.

Figure 78 Device Operation > Device Configuration > Security > Content Filter > Policy > Add/General



The following table describes the labels in this screen.

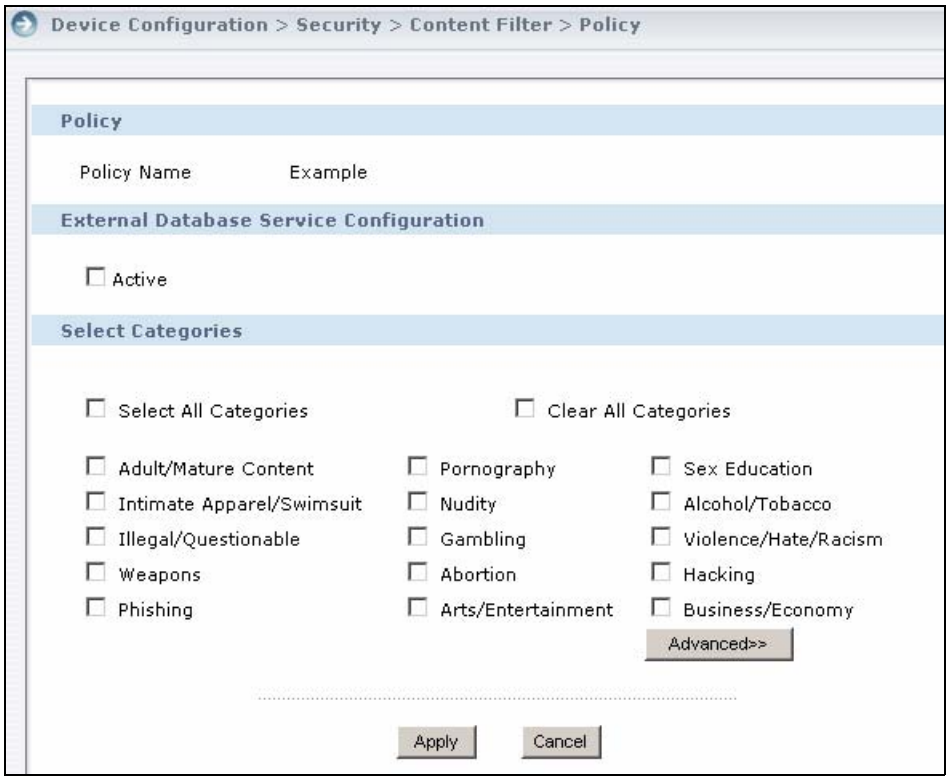
Table 68 Device Operation > Device Configuration > Security > Content Filter > Policy > Add/ General

LABEL	DESCRIPTION
Policy Name	Enter a descriptive name of up to 31 printable ASCII characters (except Extended ASCII characters) for the content filter policy. Spaces are allowed.
Active	Select this option to turn on the content filter policy.
Restrict Web Features	Select the check box(es) to restrict a feature. When you try to access a page containing a restricted feature, the whole page will be blocked or the restricted feature part of the web page will appear blank or grayed out. You will also see the message and URL you configured in the **Denied Access Message** and **Redirect URL** fields. **ActiveX** is a tool for building dynamic and active web pages and distributed object applications. When you visit an ActiveX web site, ActiveX controls are downloaded to your browser, where they remain in case you visit the site again. **Java** is a programming language and development environment for building downloadable Web components or Internet and intranet business applications of all kinds. **Cookies** are files stored on a computer's hard drive. Some web servers use them to track usage and provide service based on ID. **Web Proxy** is a server that acts as an intermediary between a user and the Internet to provide security, administrative control, and caching service. When a proxy server is located on the WAN it is possible for LAN users to circumvent content filtering by pointing to this proxy server.
Address Setup	
Address Type	Do you want the policy to apply to packets from a particular (single) IP, a range of IP addresses (for example 192.168.1.10 to 192.169.1.50), a subnet or any IP address? Select an option from the drop-down list box that includes: **Single Address**, **Range Address**, **Subnet Address** and **Any Address**.
Start IP Address	Enter the single IP address or the starting IP address in a range here.
End IP Address	Enter the ending IP address in a range here.
Subnet Mask	Enter the subnet mask here, if applicable.
Add	Click **Add** to add a new address to the **Configured Address** box. You can add multiple addresses, ranges of addresses, and/or subnets.
Modify	To edit an existing source or destination address, select it from the box and click **Modify**.
Delete	Highlight an existing source or destination address from the **Configured Address** box and click **Delete** to remove it.
Apply	Click **Apply** to save your customized settings and exit this screen.
Cancel	Click **Cancel** to exit this screen without saving.

6.13.2 Content Filter Policy: External Database

To open this screen, click a policy's external database icon in the **Device Operation** > **Device Configuration** > **Security** > **Content Filter** > **Policy** screen. Use this screen to edit which content categories the content filter policy blocks.

Figure 79 Device Operation > Device Configuration > Security > Content Filter > Policy > External Databasel



The following table describes the labels in this screen.

Table 69 Device Operation > Device Configuration > Security > Content Filter > Policy > External Database

LABEL	DESCRIPTION
Policy Name	This is the name of the content filter policy that you are configuring.
Active	Select this option to apply category based content filtering for this policy.
Select Categories	These are the categories available at the time of writing. Note: If you chose to record attempts to access the restricted pages and a web page matches more than one category you selected, you will see a log showing this page matches one category (the first matched one) only.
Select All Categories	Select this check box to restrict access to all site categories listed below.
Clear All Categories	Select this check box to clear the selected categories below.

Table 69 Device Operation > Device Configuration > Security > Content Filter > Policy > External Database

LABEL	DESCRIPTION
Adult/Mature Content	Selecting this category excludes pages that contain material of adult nature that does not necessarily contain excessive violence, sexual content, or nudity. These pages include very profane or vulgar content and pages that are not appropriate for children.
Pornography	Selecting this category excludes pages that contain sexually explicit material for the purpose of arousing a sexual or prurient interest.
Sex Education	Selecting this category excludes pages that provide graphic information (sometimes graphic) on reproduction, sexual development, safe sex practices, sexuality, birth control, and sexual development. It also includes pages that offer tips for better sex as well as products used for sexual enhancement.
Intimate Apparel/Swimsuit	Selecting this category excludes pages that contain images or offer the sale of swimsuits or intimate apparel or other types of suggestive clothing. It does not include pages selling undergarments as a subsection of other products offered.
Nudity	Selecting this category excludes pages containing nude or seminude depictions of the human body. These depictions are not necessarily sexual in intent or effect, but may include pages containing nude paintings or photo galleries of artistic nature. This category also includes nudist or naturist pages that contain pictures of nude individuals.
Alcohol/Tobacco	Selecting this category excludes pages that promote or offer the sale alcohol/tobacco products, or provide the means to create them. It also includes pages that glorify, tout, or otherwise encourage the consumption of alcohol/tobacco. It does not include pages that sell alcohol or tobacco as a subset of other products.
Illegal/Questionable	Selecting this category excludes pages that advocate or give advice on performing illegal acts such as service theft, evading law enforcement, fraud, burglary techniques and plagiarism. It also includes pages that provide or sell questionable educational materials, such as term papers. Note: This category includes sites identified as being malicious in any way (such as having viruses, spyware and etc.).

Table 69 Device Operation > Device Configuration > Security > Content Filter > Policy > External Database

LABEL	DESCRIPTION
Gambling	Selecting this category excludes pages where a user can place a bet or participate in a betting pool (including lotteries) online. It also includes pages that provide information, assistance, recommendations, or training on placing bets or participating in games of chance. It does not include pages that sell gambling related products or machines. It also does not include pages for offline casinos and hotels (as long as those pages do not meet one of the above requirements).
Violence/Hate/Racism	Selecting this category excludes pages that depict extreme physical harm to people or property, or that advocate or provide instructions on how to cause such harm. It also includes pages that advocate, depict hostility or aggression toward, or denigrate an individual or group on the basis of race, religion, gender, nationality, ethnic origin, or other characteristics.
Weapons	Selecting this category excludes pages that sell, review, or describe weapons such as guns, knives or martial arts devices, or provide information on their use, accessories, or other modifications. It does not include pages that promote collecting weapons, or groups that either support or oppose weapons use.
Abortion	Selecting this category excludes pages that provide information or arguments in favor of or against abortion, describe abortion procedures, offer help in obtaining or avoiding abortion, or provide information on the effects, or lack thereof, of abortion.
Hacking	Selecting this category excludes pages that distribute, promote, or provide hacking tools and/or information which may help gain unauthorized access to computer systems and/or computerized communication systems. Hacking encompasses instructions on illegal or questionable tactics, such as creating viruses, distributing cracked or pirated software, or distributing other protected intellectual property.
Phishing	Selecting this category excludes pages that are designed to appear as a legitimate bank or retailer with the intent to fraudulently capture sensitive data (i.e. credit card numbers, pin numbers).
Arts/Entertainment	Selecting this category excludes pages that promote and provide information about motion pictures, videos, television, music and programming guides, books, comics, movie theatres, galleries, artists or reviews on entertainment.

Table 69 Device Operation > Device Configuration > Security > Content Filter > Policy > External Database

LABEL	DESCRIPTION
Business/Economy	Selecting this category excludes pages devoted to business firms, business information, economics, marketing, business management and entrepreneurship. This does not include pages that perform services that are defined in another category (such as Information Technology companies, or companies that sell travel services).
Alternative Spirituality/ Occult	Selecting this category excludes pages that promote and provide information on religions such as Wicca, Witchcraft or Satanism. Occult practices, atheistic views, voodoo rituals or any other form of mysticism are represented here. Includes sites that endorse or offer methods, means of instruction, or other resources to affect or influence real events through the use of spells, incantations, curses and magic powers. This category includes sites which discuss or deal with paranormal or unexplained events.
Illegal Drugs	Selecting this category excludes pages that promote, offer, sell, supply, encourage or otherwise advocate the illegal use, cultivation, manufacture, or distribution of drugs, pharmaceuticals, intoxicating plants or chemicals and their related paraphernalia.
Education	Selecting this category excludes pages that offer educational information, distance learning and trade school information or programs. It also includes pages that are sponsored by schools, educational facilities, faculty, or alumni groups.
Cultural/Charitable Organization	Selecting this category excludes pages that nurture cultural understanding and foster volunteerism such as 4H, the Lions and Rotary Clubs. Also encompasses non-profit associations that cultivate philanthropic or relief efforts. Sites that provide a learning environment or cultural refinement/awareness outside of the strictures of formalized education such as museums and planetariums are included under this heading.
Financial Services	Selecting this category excludes pages that provide or advertise banking services (online or offline) or other types of financial information, such as loans. It does not include pages that offer market information, brokerage or trading services.
Brokerage/Trading	Selecting this category excludes pages that provide or advertise trading of securities and management of investment assets (online or offline). It also includes insurance pages, as well as pages that offer financial investment strategies, quotes, and news.
Online Games	Selecting this category excludes pages that provide information and support game playing or downloading, video games, computer games, electronic games, tips, and advice on games or how to obtain cheat codes. It also includes pages dedicated to selling board games as well as journals and magazines dedicated to game playing. It includes pages that support or host online sweepstakes and giveaways.
Government/Legal	Selecting this category excludes pages sponsored by or which provide information on government, government agencies and government services such as taxation and emergency services. It also includes pages that discuss or explain laws of various governmental entities.

Table 69 Device Operation > Device Configuration > Security > Content Filter > Policy > External Database

LABEL	DESCRIPTION
Military	Selecting this category excludes pages that promote or provide information on military branches or armed services.
Political/Activist Groups	Selecting this category excludes pages sponsored by or which provide information on political parties, special interest groups, or any organization that promotes change or reform in public policy, public opinion, social practice, or economic activities.
Health	Selecting this category excludes pages that provide advice and information on general health such as fitness and well-being, personal health or medical services, drugs, alternative and complimentary therapies, medical information about ailments, dentistry, optometry, general psychiatry, self-help, and support organizations dedicated to a disease or condition.
Computers/Internet	Selecting this category excludes pages that sponsor or provide information on computers, technology, the Internet and technology-related organizations and companies.
Search Engines/Portals	Selecting this category excludes pages that support searching the Internet, indices, and directories.
Spyware/Malware Sources	Selecting this category excludes pages which distribute spyware and other malware. Spyware is defined as software which takes control of your computer, modifies computer settings, collects or reports personal information, or misrepresents itself by tricking users to install, download, or enter personal information. This includes drive-by downloads; browser hijackers; dialers; intrusive advertising; any program which modifies your homepage, bookmarks, or security settings; and keyloggers. It also includes any software which bundles spyware (as defined above) as part of its offering. Information collected or reported is "personal" if it contains uniquely identifying data, such as e-mail addresses, name, social security number, IP address, etc. A site is not classified as spyware if the user is reasonably notified that the software will perform these actions (that is, it alerts that it will send personal information, be installed, or that it will log keystrokes). Note: Sites rated as spyware should have a second category assigned with them.
Spyware Effects/Privacy Concerns	Selecting this category excludes pages to which spyware (as defined in the Spyware/Malware Sources category) reports its findings or from which it alone downloads advertisements. Also includes sites that contain serious privacy issues, such as “phone home” sites to which software can connect and send user info; sites that make extensive use of tracking cookies without a posted privacy statement; and sites to which browser hijackers redirect users. Usually does not include sites that can be marked as Spyware/Malware. Note: Sites rated as spyware effects typically have a second category assigned with them.
Job Search/Careers	Selecting this category excludes pages that provide assistance in finding employment, and tools for locating prospective employers.
News/Media	Selecting this category excludes pages that primarily report information or comments on current events or contemporary issues of the day. It also includes radio stations and magazines. It does not include pages that can be rated in other categories.
Personals/Dating	Selecting this category excludes pages that promote interpersonal relationships.
Reference	Selecting this category excludes pages containing personal, professional, or educational reference, including online dictionaries, maps, census, almanacs, library catalogues, genealogy-related pages and scientific information.

Table 69 Device Operation > Device Configuration > Security > Content Filter > Policy > External Database

LABEL	DESCRIPTION
Open Image/Media Search	Selecting this category excludes pages with image or video search capabilities which return graphical results (i.e. thumbnail pictures) that include potentially pornographic content along with non-pornographic content (as defined in the Pornography category). Sites that explicitly exclude offensive content are not included in this category.
Chat/Instant Messaging	Selecting this category excludes pages that provide chat or instant messaging capabilities or client downloads.
Email	Selecting this category excludes pages offering web-based e-mail services, such as online e-mail reading, e-cards, and mailing list services.
Blogs/Newsgroups	Selecting this category excludes pages that offer access to Usenet news groups or other messaging or bulletin board systems. Also, blog specific sites or an individual with his own blog. This does not include social networking communities with blogs.
Religion	Selecting this category excludes pages that promote and provide information on conventional or unconventional religious or quasi-religious subjects, as well as churches, synagogues, or other houses of worship. It does not include pages containing alternative religions such as Wicca or witchcraft (Cult/Occult) or atheist beliefs (Political/Activist Groups).
Social Networking	Selecting this category excludes pages that enable people to connect with others to form an online community. Typically members describe themselves in personal web page policies and form interactive networks, linking them with other members based on common interests or acquaintances. Instant messaging, file sharing and web logs (blogs) are common features of Social Networking sites. Note: These sites may contain offensive material in the community-created content. Sites in this category are also referred to as "virtual communities" or "online communities". This category does not include more narrowly focused sites, like those that specifically match descriptions for Personals/Dating sites or Business sites.
Online Storage	Selecting this category excludes pages that provide a secure, encrypted, off-site backup and restoration of personal data. These online repositories are typically used to store, organize and share videos, music, movies, photos, documents and other electronically formatted information. Sites that fit this criteria essentially act as your personal hard drive on the Internet.
Remote Access Tools	Selecting this category excludes pages that primarily focus on providing information about and/or methods that enables authorized access to and use of a desktop computer or private network remotely.
Shopping	Selecting this category excludes pages that provide or advertise the means to obtain goods or services. It does not include pages that can be classified in other categories (such as vehicles or weapons).
Auctions	Selecting this category excludes pages that support the offering and purchasing of goods between individuals. This does not include classified advertisements.
Real Estate	Selecting this category excludes pages that provide information on renting, buying, or selling real estate or properties.
Society/Lifestyle	Selecting this category excludes pages providing information on matters of daily life. This does not include pages relating to entertainment, sports, jobs, sex or pages promoting alternative lifestyles such as homosexuality. Personal homepages fall within this category if they cannot be classified in another category.

Table 69 Device Operation > Device Configuration > Security > Content Filter > Policy > External Database

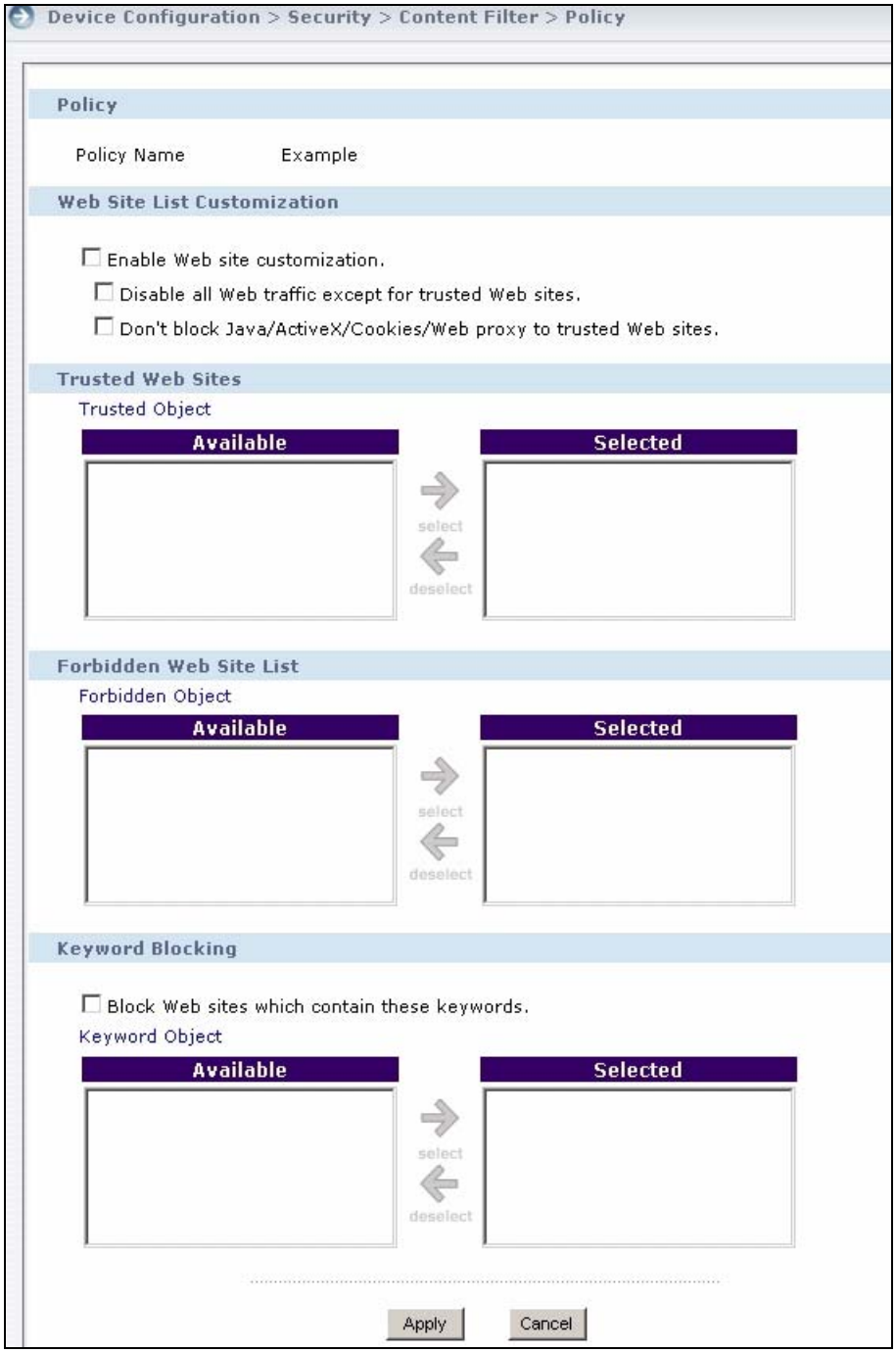
LABEL	DESCRIPTION
Sexuality/Alternative Lifestyles	Selecting this category excludes pages that provide information, promote, or cater to gays, lesbians, swingers, other sexual orientations or practices, or a particular fetish. This category does not include sites that are sexually gratuitous in nature which would typically fall under the Pornography category.
Restaurants/Dining/Food	Selecting this category excludes pages that list, review, discuss, advertise and promote food, catering, dining services, cooking and recipes.
Sports/Recreation/Hobbies	Selecting this category excludes pages that promote or provide information about spectator sports, recreational activities, or hobbies. This includes pages that discuss or promote camping, gardening, and collecting.
Travel	Selecting this category excludes pages that promote or provide opportunity for travel planning, including finding and making travel reservations, vehicle rentals, descriptions of travel destinations, or promotions for hotels or casinos.
Vehicles	Selecting this category excludes pages that provide information on or promote vehicles, boats, or aircraft, including pages that support online purchase of vehicles or parts.
Humor/Jokes	Selecting this category excludes pages that primarily focus on comedy, jokes, fun, etc. This may include pages containing jokes of adult or mature nature. Pages containing humorous Adult/Mature content also have an Adult/Mature category rating.
Software Downloads	Selecting this category excludes pages that are dedicated to the electronic download of software packages, whether for payment or at no charge.
Pay to Surf	Selecting this category excludes pages that pay users in the form of cash or prizes, for clicking on or reading specific links, e-mail, or web pages.
Peer-to-Peer	Selecting this category excludes pages that distribute software to facilitate the direct exchange of files between users, including software that enables file search and sharing across a network without dependence on a central server.
Streaming Media/MP3s	Selecting this category excludes pages that sell, deliver, or stream music or video content in any format, including sites that provide downloads for such viewers.
Proxy Avoidance	Selecting this category excludes pages that provide information on how to bypass proxy server/appliance features or gain access to URLs in any way that bypasses the proxy server/appliance. It also includes any service that will allow a person to bypass the content filtering feature, such as anonymous surfing services.
For Kids	Selecting this category excludes pages designed specifically for children.
Web Advertisements	Selecting this category excludes pages that provide online advertisements or banners. This does not include advertising servers that serve adult-oriented advertisements.
Web Hosting	Selecting this category excludes pages of organizations that provide top-level domain pages, as well as web communities or hosting services.
Apply	Click **Apply** to save your settings and exit this screen.
Cancel	Click **Cancel** to exit this screen without saving.

6.13.3 Content Filter Policy: Customization

To open this screen, click a policy's customization icon in the **Device Operation** > **Device Configuration** > **Security** > **Content Filter** > **Policy** screen. Use this screen to select good (allowed) web site addresses for this policy and bad (blocked) web site addresses. You can also block web sites based on whether the web site's address contains a keyword. Use this screen to add or remove specific sites or keywords from the filter list.

Use the **Device Operation** > **Device Configuration** > **Security** > **Content Filter** > **Object** screen (see Section 6.14 on page 179) first to configure the master lists of trusted (allowed) web sites,forbidden (blocked) web sites, and keywords.

Figure 80 Device Operation > Device Configuration > Security > Content Filter > Policy > Customizationl



The following table describes the labels in this screen.

Table 70 Device Operation > Device Configuration > Security > Content Filter > Policy > Customization

LABEL	DESCRIPTION
Policy Name	This is the name of the content filter policy that you are configuring.
Web Site List Customization	

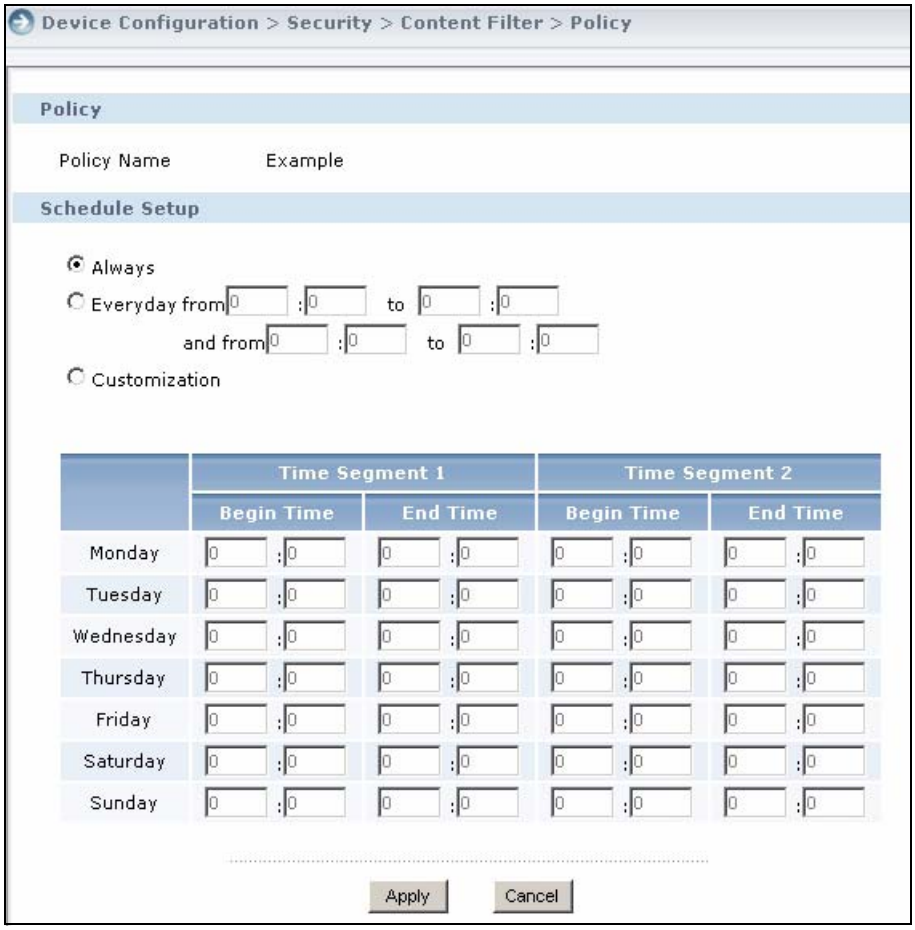
Table 70 Device Operation > Device Configuration > Security > Content Filter > Policy > Customization

LABEL	DESCRIPTION
Enable Web site customization	Select this check box to allow trusted web sites and block forbidden web sites. Content filter list customization may be enabled and disabled without re-entering these site names.
Disable all Web traffic except for trusted Web sites	When this box is selected, the Vantage CNM only allows Web access to sites on the **Trusted Web Site** list. If they are chosen carefully, this is the most effective way to block objectionable material.
Don't block Java/ActiveX/ Cookies/Web proxy to trusted Web sites	When this box is selected, the Vantage CNM will permit Java, ActiveX and Cookies from sites on the **Trusted Web Site** list to the LAN. In certain cases, it may be desirable to allow Java, ActiveX or Cookies from sites that are known and trusted.
Trusted Object	Click **Trusted Object** to go to **Device Operation** > **Device Configuration** > **Security** > **Content Filter** > **Object** screen where displays the trusted host names you configured. Select the ones to which you want to allow access in the **Available** list and use the arrow **select** button to move them to the **Selected** list. Select an entry in the **Selected** list and use the arrow **dselect** button to remove it from the list.
Forbidden Object	Click **Forbidden Object** to go to **Device Operation** > **Device Configuration** > **Security** > **Content Filter** > **Object** screen where displays the forbidden host names you configured. Select the ones to which you want this policy to block in the **Available** list and use the arrow **select** button to move them to the **Selected** list. Select an entry in the **Selected** list and use the arrow **dselect** button to remove it from the list.
Block Web sites which contain these keywords.	Select this check box to enable keyword blocking.
Keyword Object	Click **Keyword Object** to go to **Device Operation** > **Device Configuration** > **Security** > **Content Filter** > **Object** screen where allows you to block websites with URLs that contain certain keywords in the domain name or IP address. Select the ones to which you want this policy to block in the **Available** list and use the arrow **select** button to move them to the **Selected** list. Select an entry in the **Selected** list and use the arrow **dselect** button to remove it from the list.
Apply	Click **Apply** to save your settings and exit this screen.
Cancel	Click **Cancel** to exit this screen without saving.

6.13.4 Content Filter Policy: Schedule

To open this screen, click a policy's schedule icon in the **Device Operation** > **Device Configuration** > **Security** > **Content Filter** > **Policy** screen. Use this screen to set for which days and times the policy applies.

Figure 81 Device Operation > Device Configuration > Security > Content Filter > Policy > Schedulel



The following table describes the labels in this screen.

Table 71 Device Operation > Device Configuration > Security > Content Filter > Policy > Schedule

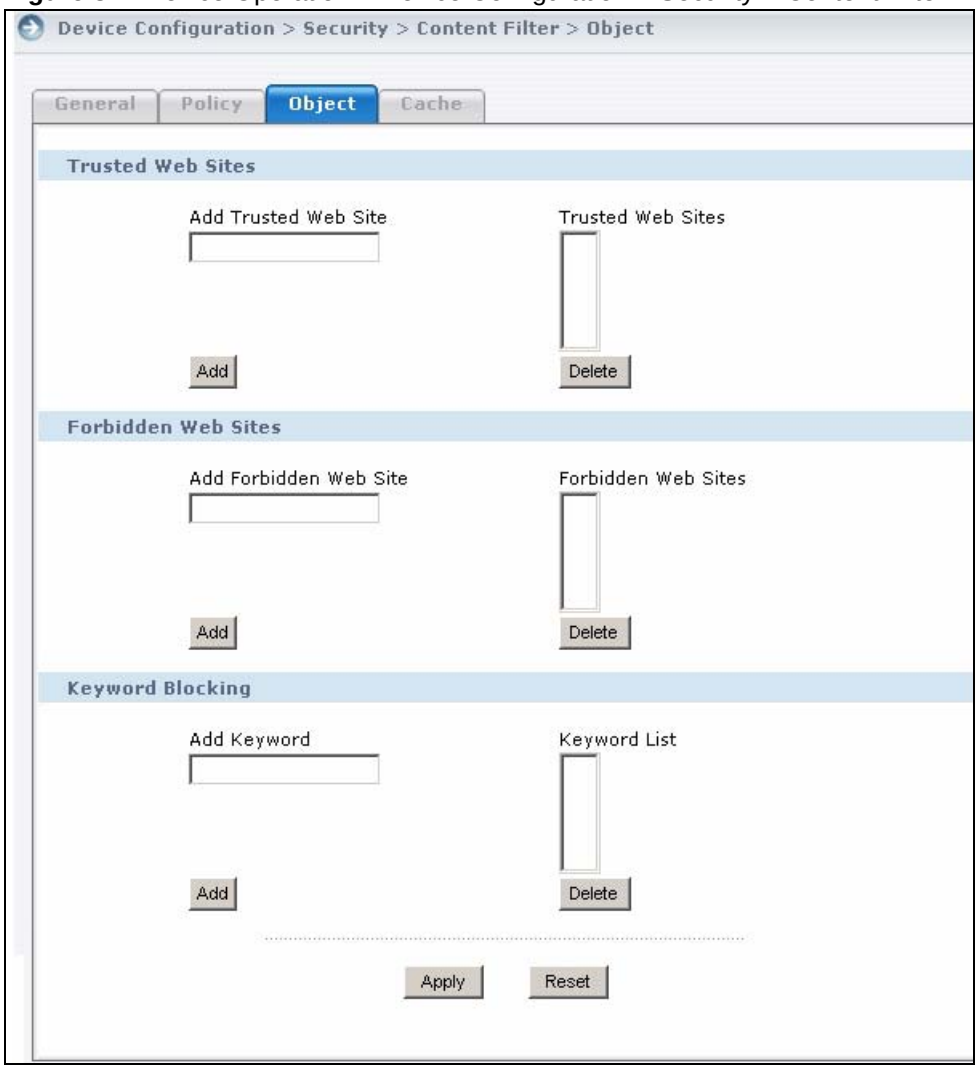
LABEL	DESCRIPTION
Policy Name	This is the name of the content filter policy that you are configuring.
Schedule Setup	Content filtering scheduling applies to the filter list, customized sites and keywords. Restricted web server data, such as ActiveX, Java, Cookies and Web Proxy are not affected.
Always	Select this option to have content filtering active all the time.
Everyday from/to	Select this option to have content filtering active during the specified time interval(s) of each day. In the **from** and **to** fields, enter the time period(s), in 24-hour format, during which content filtering will be enforced.
Customization	Select this option to have content filtering only active during the specified time interval(s) of the specified day(s). In the **Begin Time** and **End Time** fields, enter the time period(s), in 24-hour format, for individual day(s) of the week.
Apply	Click **Apply** to save your settings and exit this screen.
Cancel	Click **Cancel** to exit this screen without saving.

6.14 Content Filter Objects

Use this screen to create a list of good (allowed) web site addresses, a list of bad (blocked) web site addresses, or block web sites based on whether the web site's address contains a keyword.. To open this screen, click a device, click **Device Operation** in the menu bar and then click **Device Configuration** > **Security** > **Content Filter** > **Object** in the navigation panel.

To use this screens settings in content filtering, you must use the **Device Operation** > **Device Configuration** > **Security > Content Filter > Policy > Customization** screen to set individual policies to add or remove specific sites or keywords for individual policies.

Figure 82 Device Operation > Device Configuration > Security > Content Filter > Object



The following table describes the labels in this screen.

Table 72 Device Operation > Device Configuration > Security > Content Filter > Object

LABEL	DESCRIPTION
Trusted Web Sites	These are sites that you want to allow access to, regardless of their content rating, can be allowed by adding them to this list. You can enter up to 32 entries.
Add Trusted Web Site	Enter host names such as www.good-site.com into this text field. Do not enter the complete URL of the site – that is, do not include “http://”. All subdomains are allowed. For example, entering “zyxel.com” also allows “www.zyxel.com”, “partner.zyxel.com”, “press.zyxel.com”, etc.
Trusted Web Sites	This list displays the trusted web sites already added.
Add	Click this button when you have finished adding the host name in the text field above.
Delete	Select a web site name from the **Trusted Web Site List**, and then click this button to delete it from that list.
Forbidden Web Site List	Sites that you want to block access to, regardless of their content rating, can be allowed by adding them to this list. You can enter up to 32 entries.
Add Forbidden Web Site	Enter host names such as www.bad-site.com into this text field. Do not enter the complete URL of the site – that is, do not include “http://”. All subdomains are blocked. For example, entering “bad-site.com” also blocks “www.bad-site.com”, “partner.bad-site.com”, “press.bad-site.com”, etc.
Forbidden Web Sites	This list displays the forbidden web sites already added.
Add	Click this button when you have finished adding the host name in the text field above.
Delete	Select a web site name from the **Forbidden Web Site List**, and then click this button to delete it from that list.
Keyword Blocking	**Keyword Blocking** allows you to block websites with URLs that contain certain keywords in the domain name or IP address.
Add Keyword	Enter a keyword (up to 31 printable ASCII characters) to block. You can also enter a numerical IP address.
Keyword List	This list displays the keywords already added.
Add	Click this button when you have finished adding the key words field above.
Delete	Select a keyword from the **Keyword List**, and then click this button to delete it from that list.
Apply	Click **Apply** to save your changes back to the device.
Reset	Click **Reset** to begin configuring this screen afresh.

6.15 Content Filtering Cache

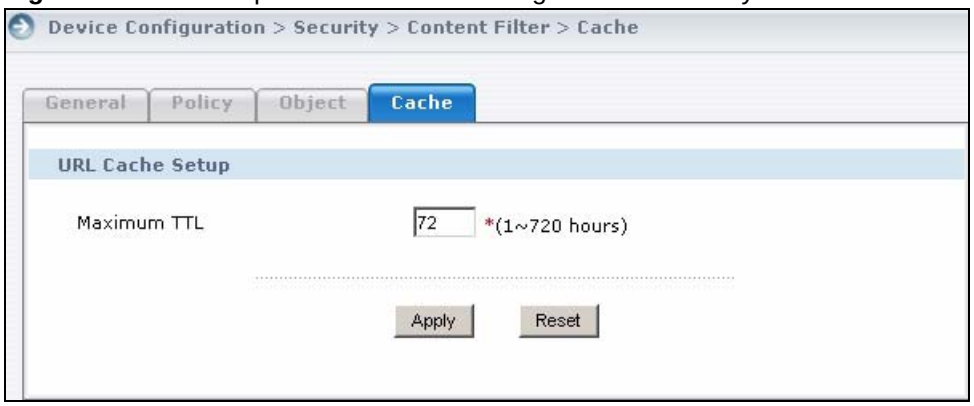
To open this screen, click a device, click **Device Operation** in the menu bar and then click **Device Configuration** > **Security** > **Content Filter** > **Cache** in the navigation panel.

Use this screen to view and configure your device's URL caching. You can also configure how long a categorized web site address remains in the cache as well as view those web site addresses to which access has been allowed or blocked based on the responses from the external content filtering server. The device only queries the external content filtering database for sites not found in the cache.

You can remove individual entries from the cache. When you do this, the device queries the external content filtering database the next time someone tries to access that web site. This allows you to check whether a web site's category has been changed.

Please see the device's User's Guide for how to submit a web site that has been incorrectly categorized.

Figure 83 Device Operation > Device Configuration > Security > Content Filter > Cache



The following table describes the labels in this screen.

Table 73 Device Operation > Device Configuration > Security > Content Filter > Cache

LABEL	DESCRIPTION
Maximum TTL	Type the maximum time to live (TTL) (1 to 720 hours). This sets how long the device is to allow an entry to remain in the URL cache before discarding it.
Apply	Click **Apply** to save your changes back to the device.
Reset	Click **Reset** to begin configuring this screen afresh.

6.16 X Auth

This section shows you how to configure the user authentication screens. These screens may vary depending on which model you're configuring. Please see the device's User's Guide for more information about any of these screens or fields.

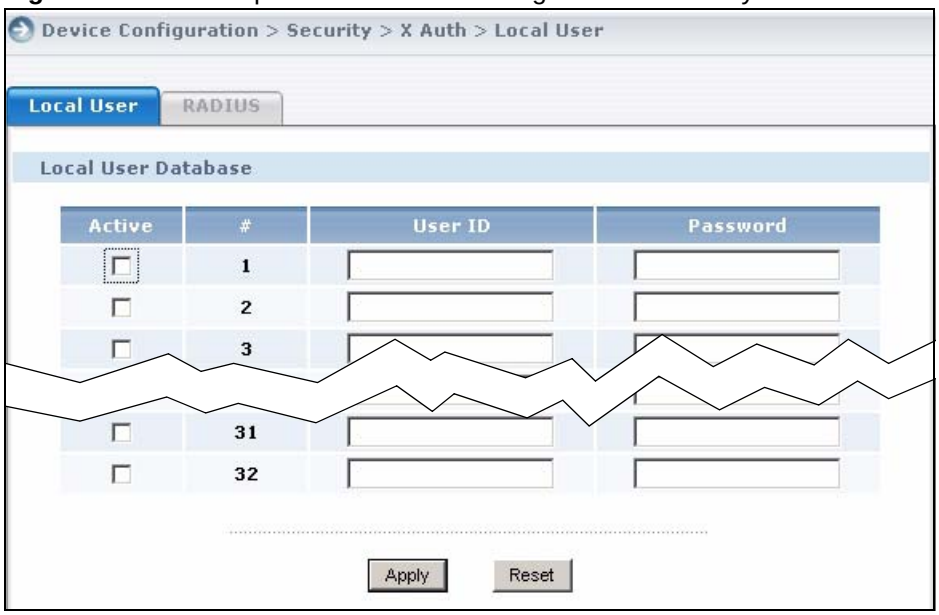
6.17 Local User Database

Use this screen if you want to use a device local user database to perform user authentication.

By storing user profiles locally, your device is able to authenticate wireless users without interacting with a network RADIUS server. However, there is a limit on the number of users you may authenticate in this way.

To open this screen, click a device, click **Device Operation** in the menu bar and then click **Device Configuration** > **X Auth** > **Local User** in the navigation panel.

Figure 84 Device Operation > Device Configuration > Security > X Auth > Local User



The following table describes the labels in this screen.

Table 74 Device Operation > Device Configuration > Security > X Auth > Local User

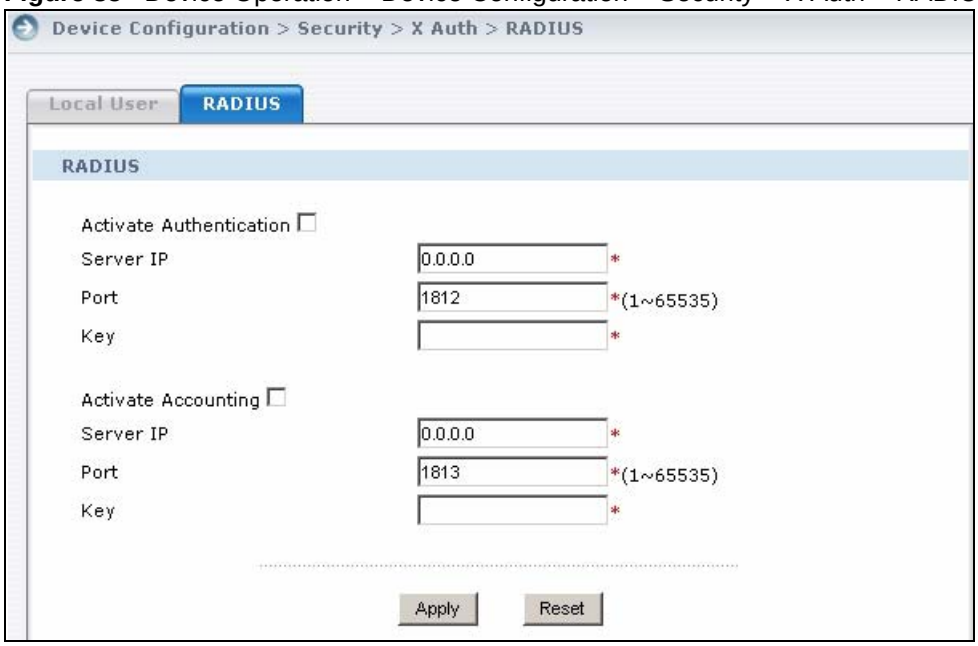
LABEL	DESCRIPTION
Active	Select this check box to enable the user profile.
Index	This is the local user index number.
User ID	Enter the user name of the user profile.
Password	Enter a password up to 31 characters long for this user profile.
Next	Select Next to view the next page of **Local User Database** entries.
Apply	Click **Apply** to save your changes back to the device.
Reset	Click **Reset** to begin configuring this screen afresh.

6.18 RADIUS

Use this screen if you want to use an external server to perform authentication.

To open this screen, click a device, click **Device Operation** in the menu bar and then click **Device Configuration** > **Security** > **X Auth** > **RADIUS** in the navigation panel.

Figure 85 Device Operation > Device Configuration > Security > X Auth > RADIUS



The following table describes the fields in this screen.

Table 75 Device Operation > Device Configuration > Security > X Auth > RADIUS

LABEL	DESCRIPTION
Activate Authentication	Enable this feature to have the device use an external authentication server in performing user authentication. Disable this feature if you will not use an external authentication server. If you disable this feature, you can still set the device to perform user authentication using the local user database.
Server IP	Enter the IP address of the external authentication server in dotted decimal notation.
Port	The default port of the RADIUS server for authentication is **1812**. You need not change this value unless your network administrator instructs you to do so with additional information.
Key	Enter a password (up to 31 alphanumeric characters) as the key to be shared between the external authentication server and the access points. The key is not sent over the network. This key must be the same on the external authentication server and device.
Activate Accounting	Enable this feature to do user accounting through an external authentication server.
Server IP	Enter the IP address of the external accounting server in dotted decimal notation.
Port	The default port of the RADIUS server for accounting is **1813**. You need not change this value unless your network administrator instructs you to do so with additional information.
Key	Enter a password (up to 31 alphanumeric characters) as the key to be shared between the external accounting server and the access points. The key is not sent over the network. This key must be the same on the external accounting server and device.
Apply	Click **Apply** to save your changes back to the device.
Reset	Click **Reset** to begin configuring this screen afresh.

7

Device Advanced Settings

Use these screens to configure Device advanced settings such as NAT, Static Route, DNS and Remote Management.

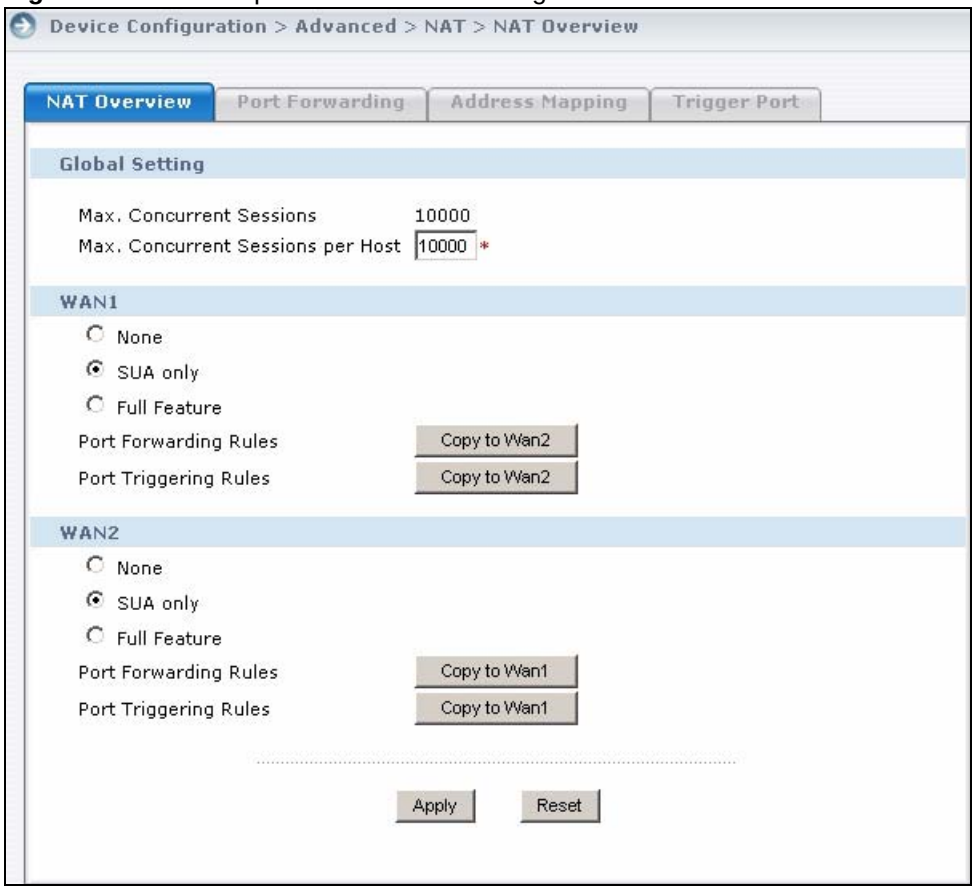
7.0.1 NAT

This section shows you how to configure the **NAT** screens. These screens may vary depending on which model you're configuring. Please see the device's User's Guide for more information about any of these screens or fields.

7.1 NAT

Use this screen to specify what type of NAT the device should use and to configure any global NAT settings. To open this screen, click a device, click **Device Operation** in the menu bar, and then click **Device Configuration** > **Advanced** > **NAT** > **NAT Overview** in the navigation panel.

Figure 86 Device Operation > Device Configuration > Advanced > NAT > NAT Overview



The following table describes the fields in this screen.

Table 76 Device Operation > Device Configuration > Advanced > NAT > NAT Overview

LABEL	DESCRIPTION
Global Setting	
Max. Concurrent Sessions	This read-only field displays the highest number of NAT sessions that the device will permit at one time.
Max. Concurrent Sessions Per Host	Use this field to set the highest number of NAT sessions that the device will permit a host to have at one time.
WAN1/WAN2	Use this section to select what kind of NAT the device should use for WAN1 and WAN2 ports. In some cases, the device might be able to use different kinds of NAT on different ports.
None	Select **None** to disable NAT on the device.
SUA Only	Select **SUA Only** to apply many-to-one mapping only (sufficient if the device has only one public IP address).
Full Feature	Select **Full Feature** to avail of multiple mapping types.

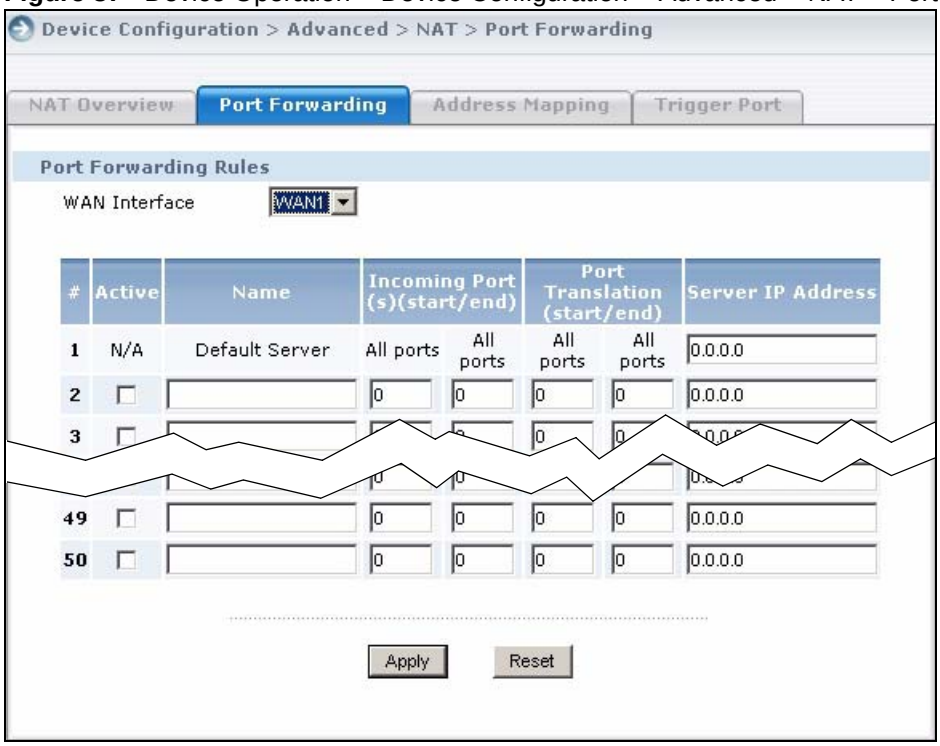
Table 76 Device Operation > Device Configuration > Advanced > NAT > NAT Overview

LABEL	DESCRIPTION
Port Forwarding Rules	Click **Copy to WAN 2** (or **Copy to WAN 1**) to duplicate this WAN port's NAT port forwarding rules on the other WAN port. Note: Using the copy button overwrites the other WAN port's existing rules. The copy button is best suited for initial NAT configuration where you have configured NAT port forwarding rules for one port and want to use similar rules for the other WAN port. You can use the other NAT screens to edit the NAT rules after you copy them from one WAN port to the other.
Port Triggering Rules	Click **Copy to WAN 2** (or **Copy to WAN 1**) to duplicate this WAN port's NAT trigger port rules on the other WAN port. Note: Using the copy button overwrites the other WAN port's existing rules. The copy button is best suited for initial NAT configuration where you have configured NAT trigger port rules for one port and want to use similar rules for the other WAN port. You can use the other NAT screens to edit the NAT rules after you copy them from one WAN port to the other.
Edit	Click **Edit** to advance to the selected feature.
Apply	Click **Apply** to begin configuring this screen afresh.

7.2 Port Forwarding

Use this screen to configure port forwarding on the device. To open this screen, click a device, click **Device Operation** in the menu bar, and then click **Device Configuration** > **Advanced** > **NAT** > **Port Forwarding** in the navigation panel.

Figure 87 Device Operation > Device Configuration > Advanced > NAT > Port Forwarding



The following table describes the labels in this screen.

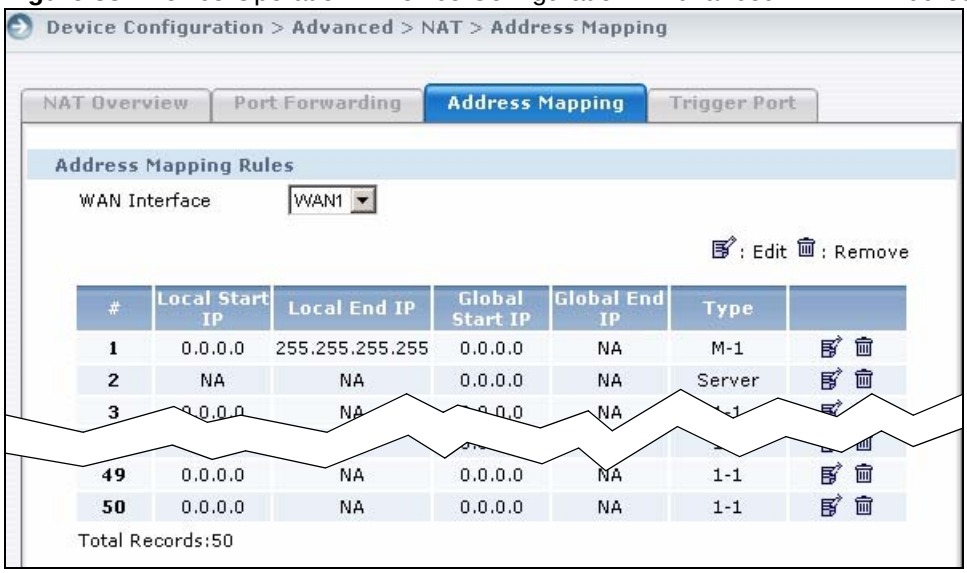
Table 77 Device Operation > Device Configuration > Advanced > NAT > Port Fowarding

LABEL	DESCRIPTION
WAN Interface	Select the WAN port to use the port forwarding rules.
#	This is the number of an individual entry.
Active	Select this check box to enable the port forwarding entry. Clear this check box to disallow forwarding of these ports to an inside server without having to delete the entry.
Name	Type a name to identify this port-forwarding rule. To delete a port forwarding entry, erase the name, and click **Apply**.
Default Server All Ports	In addition to the servers for specified services, NAT supports a default server. A default server receives packets from ports that are not specified in this screen. If you do not assign a default server IP address, then all packets received for ports not specified in this screen or remote management will be discarded.
Incoming Port(s) (start/end)	Enter a port number here. To forward only one port, enter it again in the second field. To specify a range of ports, enter the last port to be forwarded in the second field.
Port Translation (start/end)	Enter the port number here to which you want the device to translate the incoming port. For a range of ports, you only need to enter the first number of the range to which you want the incoming ports translated, the device automatically calculates the last port of the translated port range.
Server IP Address	Type the IP address of the inside server.
Apply	Click **Apply** to save your changes back to the device.
Reset	Click **Reset** to begin configuring this screen afresh.

7.3 Address Mapping

Use this screen to configure various types of network address translation (NAT) on the device. To open this screen, click a device, click **Device Operation** in the menu bar, and then click **Device Configuration** > **Advanced** > **NAT** > **Address Mapping** in the navigation panel.

Figure 88 Device Operation > Device Configuration > Advanced > NAT > Address Mapping


Device Configuration > Advanced > NAT > Address Mapping
NAT Overview
Port Forwarding
Address Mapping
Trigger Port
Address Mapping Rules
WAN Interface
WAN1
: Edit : Remove
Local Start IP Local End IP Global Start IP Global End IP Type
1 0.0.0.0 255.255.255.255 0.0.0.0 NA M-1
2 NA NA 0.0.0.0 NA Server
49 0.0.0.0 NA 0.0.0.0 NA 1-1
50 0.0.0.0 NA 0.0.0.0 NA 1-1
Total Records:50

The following table describes the labels in this screen.

Table 78 Device Operation > Device Configuration > Advanced > NAT > Address Mapping

LABEL	DESCRIPTION
WAN Interface	Select the WAN port to use the address mapping rules.
#	This is the number of an individual entry.
Local Start IP	This refers to the Inside Local Address (ILA), which is the starting local IP address. Local IP addresses are **N/A** for **Server** port mapping.
Local End IP	This is the end Inside Local Address (ILA). If the rule is for all local IP addresses, then this field displays 0.0.0.0 and 255.255.255.255 as the **Local End IP** address. This field is **N/A** for **One-to-One** and **Server** mapping types.
Global Start IP	This refers to the Inside Global IP Address (IGA). 0.0.0.0 is for a dynamic IP address from your ISP with **Many-to-One** and **Server** mapping types.
Global End IP	This is the ending Inside Global Address (IGA), which is the starting global IP address. This field is **N/A** for **One-to-One**, **Many-to-One** and **Server** mapping types.
Type	1. **One-to-One** mode maps one local IP address to one global IP address. Note that port numbers do not change for the One-to-one NAT mapping type. 2. **Many-to-One** mode maps multiple local IP addresses to one global IP address. This is equivalent to SUA (in other words, PAT, or port address translation), ZyXEL's Single User Account feature that previous routers supported only. 3. **Many-to-Many Overload** mode maps multiple local IP addresses to shared global IP addresses. 4. **Many One-to-One** mode maps each local IP address to unique global IP addresses. 5. **Server** allows you to specify inside servers of different services behind the NAT to be accessible to the outside world.
Edit	Click **Edit** to add or modify an address-mapping rule.

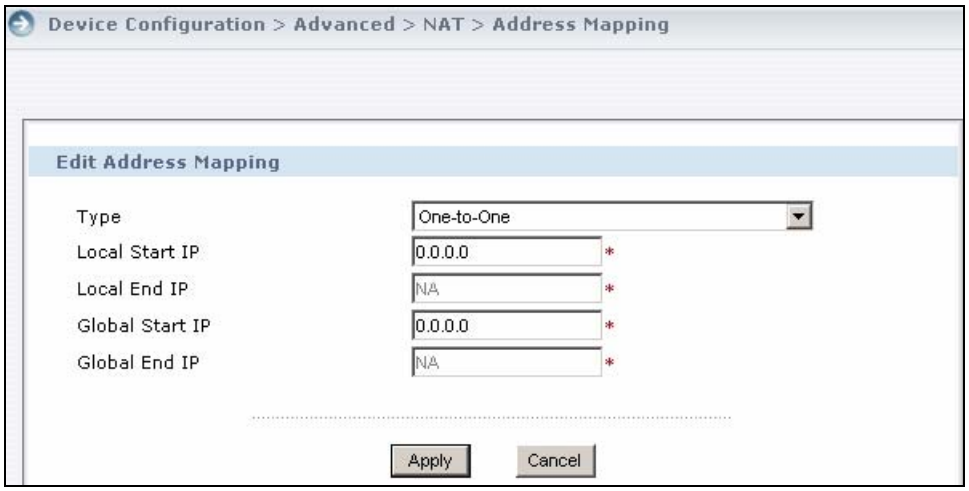
Table 78 Device Operation > Device Configuration > Advanced > NAT > Address Mapping

LABEL	DESCRIPTION
Remove	Click **Remove** to delete the address-mapping rule.
Apply	Click **Apply** to save your changes back to the device.
Cancel	Click **Cancel** to close this screen without applying any changes.

7.3.1 Edit Address Mapping Rule

Use this screen to edit an address mapping rule on the device. To open this screen, click **Edit** for a rule in the **Device Operation** > **Device Configuration** > **Advanced** > **NAT** > **Address Mapping** screen.

Figure 89 Device Operation > Device Configuration > Advanced > NAT > Address Mapping > Edit



The following table describes the labels in this screen.

Table 79 Device Operation > Device Configuration > Advanced > NAT > Address Mapping > Edit

LABEL	DESCRIPTION
Type	When you select **Type** you can choose a server mapping set. Choose the port mapping type from one of the following. 1. **One-to-One**: One-to-one mode maps one local IP address to one global IP address. Note that port numbers do not change for One-to-one NAT mapping type. 2. **Many-to-One**: Many-to-One mode maps multiple local IP addresses to one global IP address. This is equivalent to SUA (in other words, PAT, or port address translation), ZyXEL's Single User Account feature. 3. **Many-to-Many Ov** (Overload): Many-to-Many Overload mode maps multiple local IP addresses to shared global IP addresses. 4. **Many One-to-One**: Many One-to-one mode maps each local IP address to unique global IP addresses. 5. **Server**: This type allows you to specify inside servers of different services behind the NAT to be accessible to the outside world.
Local Start IP	This is the starting Inside Local IP Address (ILA). Local IP addresses are **N/A** for **Server** port mapping.

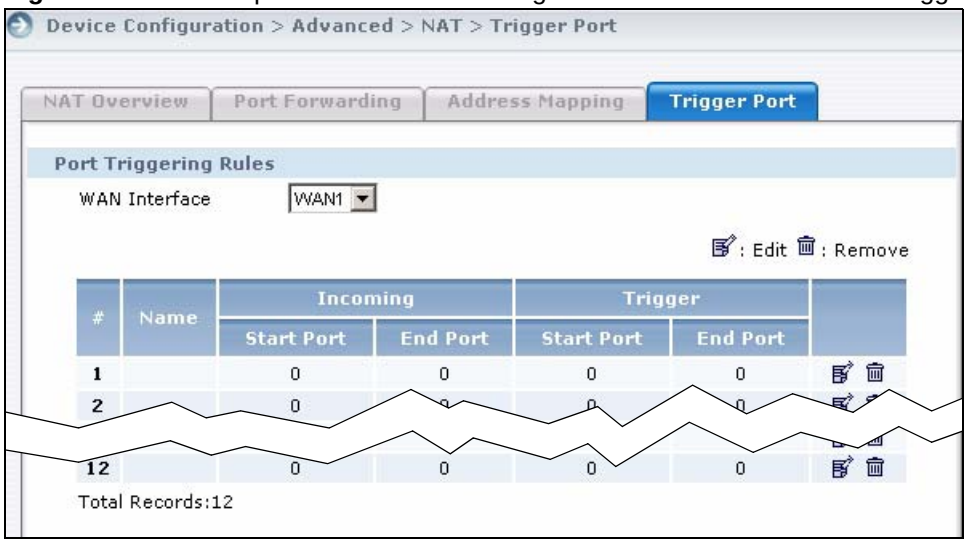
Table 79 Device Operation > Device Configuration > Advanced > NAT > Address Mapping > Edit (continued)

LABEL	DESCRIPTION
Local End IP	This is the end Inside Local IP Address (ILA). If your rule is for all local IP addresses, then enter 0.0.0.0 as the **Local Start IP** address and 255.255.255.255 as the **Local End IP** address. This field is **N/A** for **One-to-One** and **Server** mapping types.
Global Start IP	This is the starting Inside Global IP Address (IGA). Enter 0.0.0.0 here if you have a dynamic IP address from your ISP.
Global End IP	This is the ending Inside Global IP Address (IGA). This field is **N/A** for **One-to-One**, **Many-to-One** and **Server** mapping types.
Apply	Click **Apply** to save your changes back to the device.
Cancel	Click **Cancel** to return to the previous screen.

7.4 Trigger Port

Use this screen to configure trigger port forwarding on the device. To open this screen, click a device, click **Device Operation** in the menu bar and then click **Device Configuration** > **Advanced** > **NAT** > **Trigger Port** in the navigation panel.

Figure 90 Device Operation > Device Configuration > Advanced > NAT > Trigger Port



The following table describes the labels in this screen.

Table 80 Device Operation > Device Configuration > Advanced > NAT > Trigger Port

LABEL	DESCRIPTION
WAN Interface	Select a WAN port to use the port triggering rule.
#	This is the number of an individual entry.
Name	This field displays a unique name (up to 15 characters) for identification purposes.
Incoming	Incoming is a port (or a range of ports) that a server on the WAN uses when it sends out a particular service. The device forwards the traffic with this port (or range of ports) to the client computer on the LAN that requested the service.

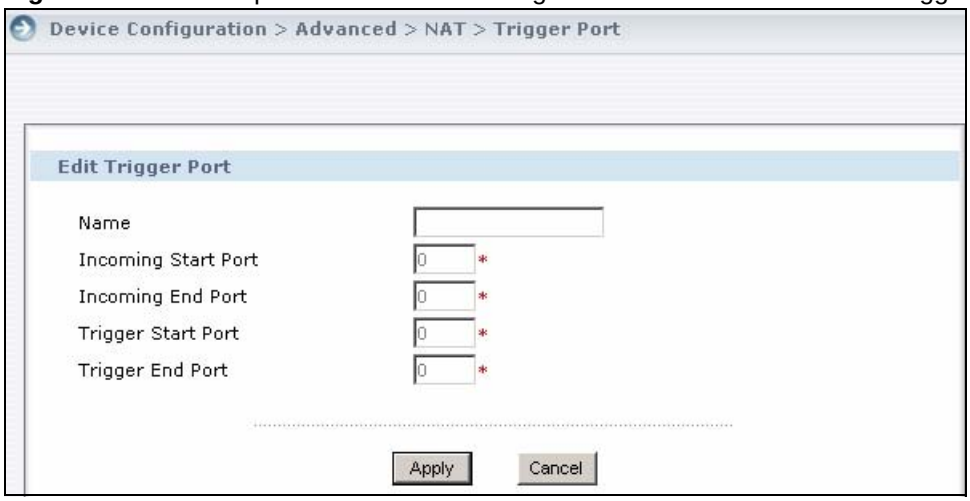
Table 80 Device Operation > Device Configuration > Advanced > NAT > Trigger Port

LABEL	DESCRIPTION
Start Port	This field displays a port number or the starting port number in a range of port numbers.
End Port	This field displays a port number or the ending port number in a range of port numbers.
Trigger	The trigger port is a port (or a range of ports) that causes (or triggers) the device to record the IP address of the LAN computer that sent the traffic to a server on the WAN.
Start Port	This field displays a port number or the starting port number in a range of port numbers.
End Port	This field displays a port number or the ending port number in a range of port numbers.
Edit	Click **Edit** to add or modify a trigger port rule.
Remove	Click **Remove** to delete a trigger port rule.
Apply	Click **Apply** to save your changes back to the device.
Cancel	This field displays a port number or the ending port number in a range of port numbers.

7.4.1 Edit Trigger Port Rule

Use this screen to edit a trigger port forwarding rule on the device. To open this screen, click **Configuration** > **NAT**, select **SUA Only** or **Full Feature**, click **Edit**, select **Trigger Port**, and click the **Index** field for the rule.

Figure 91 Device Operation > Device Configuration > Advanced > NAT > Trigger Port > Edit



The following table describes the labels in this screen.

Table 81 Device Operation > Device Configuration > Advanced > NAT > Trigger Port > Edit

LABEL	DESCRIPTION
Name	Type a unique name (up to 15 characters) for identification purposes. All characters are permitted - including spaces.
	Incoming is a port (or a range of ports) that a server on the WAN uses when it sends out a particular service. The device forwards the traffic with this port (or range of ports) to the client computer on the LAN that requested the service.

Table 81 Device Operation > Device Configuration > Advanced > NAT > Trigger Port > Edit

LABEL	DESCRIPTION
Incoming Start Port	Type a port number or the starting port number in a range of port numbers.
Incoming End Port	Type a port number or the ending port number in a range of port numbers.
	The trigger port is a port (or a range of ports) that causes (or triggers) the device to record the IP address of the LAN computer that sent the traffic to a server on the WAN.
Trigger Start Port	Type a port number or the starting port number in a range of port numbers.
Trigger End Port	Type a port number or the ending port number in a range of port numbers.
Apply	Click **Apply** to save your changes back to the device.
Cancel	Click **Cancel** to return to the previous screen.

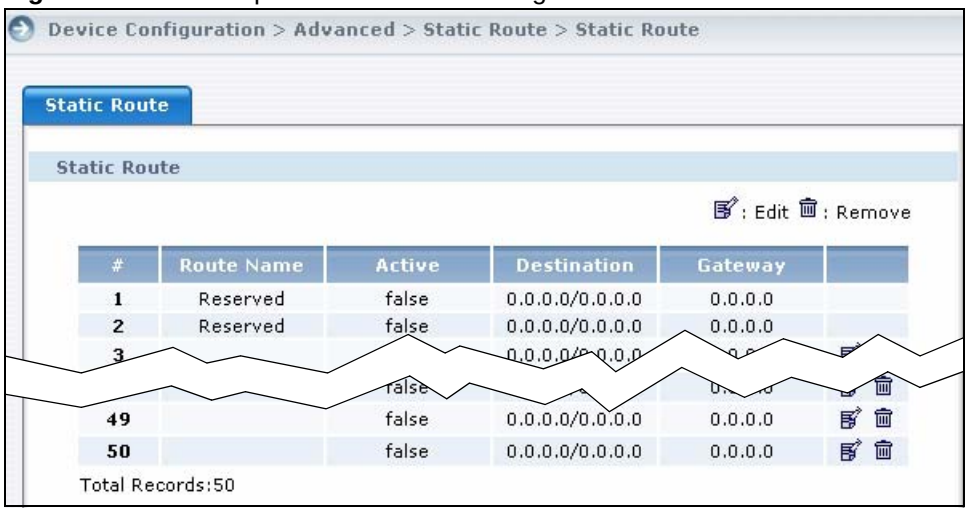
7.5 Static Route

This section shows you how to configure the **Static Route** screens. These screens may vary depending on which model you're configuring. Please see the device's User's Guide for more information about any of these screens or fields.

7.6 Static Route

Use this screen to tell the device about networks that are not directly connected to the device. To open this screen, click a device, click **Device Operation** in the menu bar and then click **Device Configuration** > **Advanced** > **Static Route** in the navigation panel.

Figure 92 Device Operation > Device Configuration > Advanced > Static Route


Device Configuration > Advanced > Static Route > Static Route
Static Route
Static Route
: Edit : Remove
Route Name Active Destination Gateway
1 Reserved false 0.0.0.0/0.0.0.0 0.0.0.0
2 Reserved false 0.0.0.0/0.0.0.0 0.0.0.0
49 false 0.0.0.0/0.0.0.0 0.0.0.0
50 false 0.0.0.0/0.0.0.0 0.0.0.0
Total Records:50

The following table describes the labels in this screen.

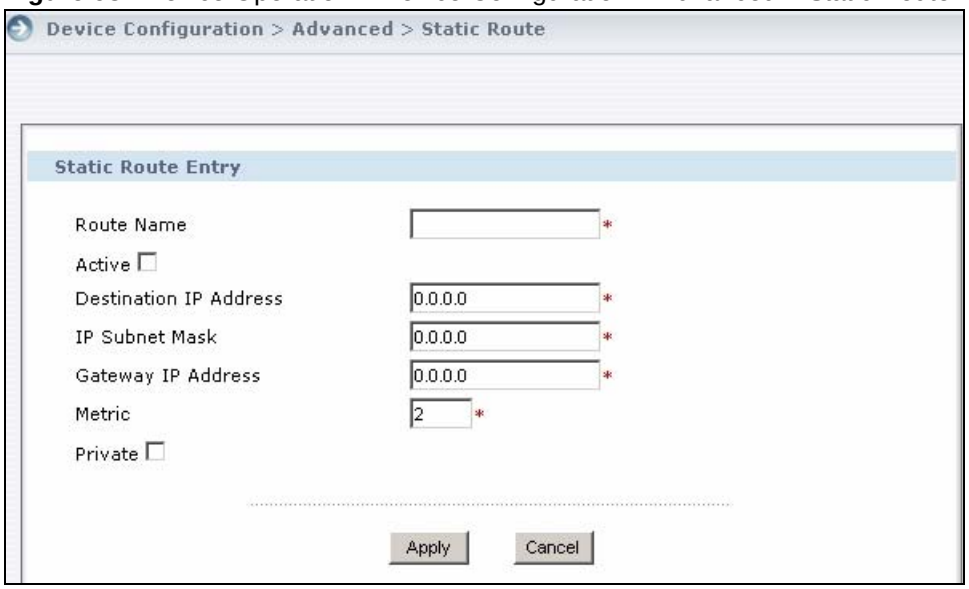
Table 82 Device Operation > Device Configuration > Advanced > Static Route

LABEL	DESCRIPTION
#	This is the number of an individual entry.
Route Name	This is the name that describes or identifies this route. To delete a static route, erase the name and then click apply.
Active	This field shows whether this static route is active or not.
Destination	This parameter specifies the IP network address of the final destination. Routing is always based on network number.
Gateway	This is the IP address of the gateway. The gateway is an immediate neighbor of the device that will forward the packet to the destination. On the LAN, the gateway must be a router on the same segment as the device; over the WAN, the gateway must be the IP address of one of the remote nodes.
Edit	Click **Edit** to set up a static route on the device.
Remove	Click **Remove** to delete a static route.

7.6.1 Edit Static Route

Use this screen to edit a static route in the device. To open this screen, select a static route, and click **Edit** in the **Device Operation** > **Device Configuration** > **Advanced** > **Static Route** screen.

Figure 93 Device Operation > Device Configuration > Advanced > Static Route > Edit



The following table describes the labels in this screen.

Table 83 Device Operation > Device Configuration > Advanced > Static Route > Edit

LABEL	DESCRIPTION
Route Name	Enter the name of the IP static route. Leave this field blank to delete this static route.
Active	This check box allows you to activate/deactivate this static route.

Table 83 Device Operation > Device Configuration > Advanced > Static Route > Edit

LABEL	DESCRIPTION
Destination IP Address	This parameter specifies the IP network address of the final destination. Routing is always based on network number. If you need to specify a route to a single host, use a subnet mask of 255.255.255.255 in the subnet mask field to force the network number to be identical to the host ID.
IP Subnet Mask	Enter the IP subnet mask here.
Gateway IP Address	Enter the IP address of the gateway. The gateway is an immediate neighbor of the device that will forward the packet to the destination. On the LAN, the gateway must be a router on the same segment as the device; over the WAN, the gateway must be the IP address of one of the Remote Nodes.
Metric	Metric represents the cost of transmission for routing purposes. IP routing uses hop count as the measurement of cost, with a minimum of 1 for directly connected networks. Enter a number that approximates the cost for this link. The number need not be precise, but it must be between 1 and 15. In practice, 2 or 3 is usually a good number.
Private	This parameter determines if the device will include this route to a remote node in its RIP broadcasts. Select this check box to keep this route private and not included in RIP broadcasts. Clear this check box to propagate this route to other hosts through RIP broadcasts.
Apply	Click **Apply** to save your changes back to the device.
Cancel	Click **Cancel** to return to the previous screen.

7.7 DNS

This section shows you how to configure the **DNS** screens. These screens may vary depending on which model you're configuring. Please see the device's User's Guide for more information about any of these screens or fields.

7.8 Address Record

Use this screen to map a fully-qualified domain name (FQDN) to an IP address. To open this screen, click a device, click **Device Operation** in the menu bar and then click **Device Configuration** > **Advanced** > **DNS** > **Address Record** in the navigation panel.

Figure 94 Device Operation > Device Configuration > Advanced > DNS > Address Record

The following table describes the labels in this screen.

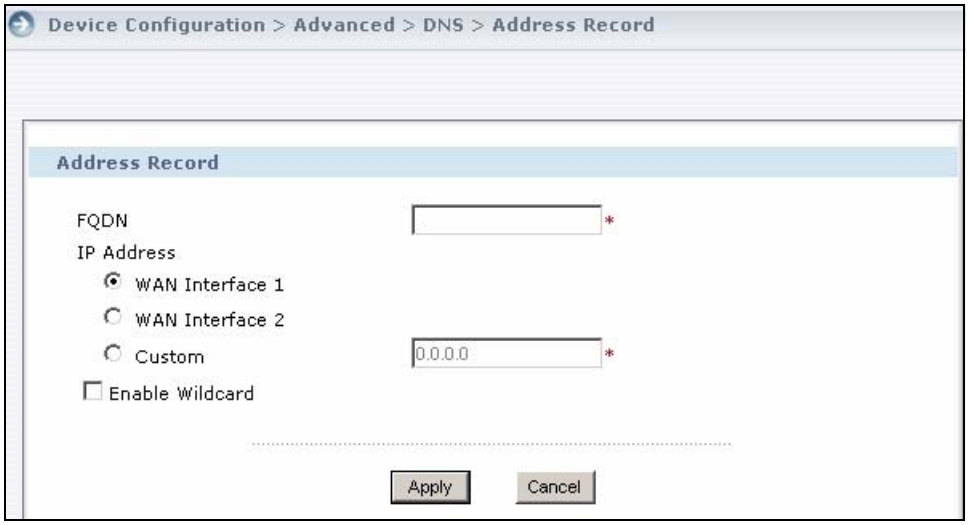
Table 84 Device Operation > Device Configuration > Advanced > DNS > Address Record

LABEL	DESCRIPTION
#	This is the number of an individual entry.
FQDN	This is a host's fully qualified domain name.
Wildcard	This column displays whether or not the DNS wildcard feature is enabled for this domain name.
IP Address	This is the IP address of a host.
Add	Click the **Add** button to open a screen where you can add a new address record.
Edit	Click **Edit** to modify an address record for the device.
Remove	Click **Remove** to delete an existing record. A window display asking you to confirm that you want to delete the record. Note that subsequent records move up by one when you take this action.

7.8.1 Add/Edit an Address Record

Use this screen to create or edit an address record.

Figure 95 Device Operation > Device Configuration > Advanced > DNS > Address Record > Add/Edit



The following table describes the labels in this screen.

Table 85 Device Operation > Device Configuration > Advanced > DNS > Address Record > Add/Edit

LABEL	DESCRIPTION
FQDN	Type a fully qualified domain name (FQDN) of a server. An FQDN starts with a host name and continues all the way up to the top-level domain name. For example, www.zyxel.com.tw is a fully qualified domain name, where "www" is the host, "zyxel" is the second-level domain, and "com.tw" is the top level domain.
IP Address	If this entry is for one of the WAN ports, select the WAN port. For entries that are not for one of the WAN ports, select **Custom** and enter the IP address of the host in dotted decimal notation.
Enable Wildcard	Select the check box to enable DNS wildcard.

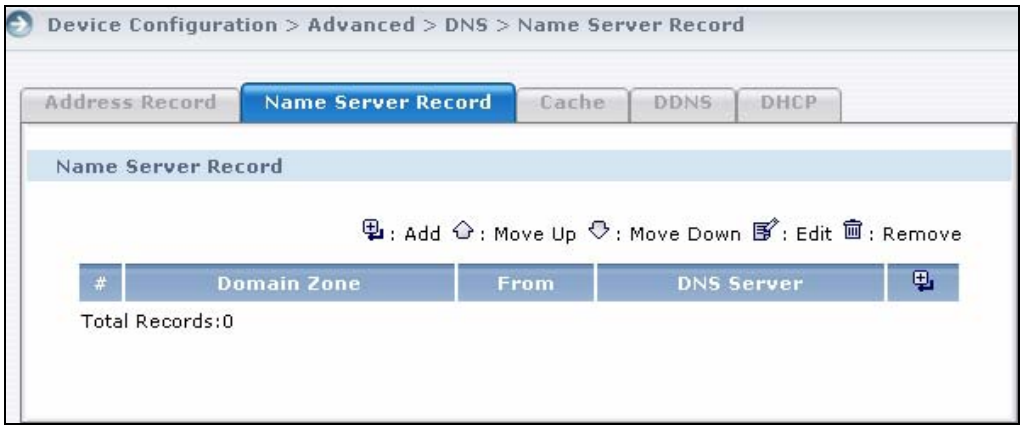
Table 85 Device Operation > Device Configuration > Advanced > DNS > Address Record > Add/Edit (continued)

LABEL	DESCRIPTION
Apply	Click **Apply** to save your changes back to the device.
Cancel	Click **Cancel** to exit this screen without saving.

7.9 Name Server Record

Use this screen to specify the IP address of a DNS server that the device can query to resolve domain names for features like VPN, DDNS, and the time server. To open this screen, click a device, click **Device Operation** in the menu bar and then click **Device Configuration** > **Advanced** > **DNS** > **Name Server Record** in the navigation panel.

Figure 96 Device Operation > Device Configuration > Advanced > DNS > Name Server Record



The following table describes the labels in this screen.

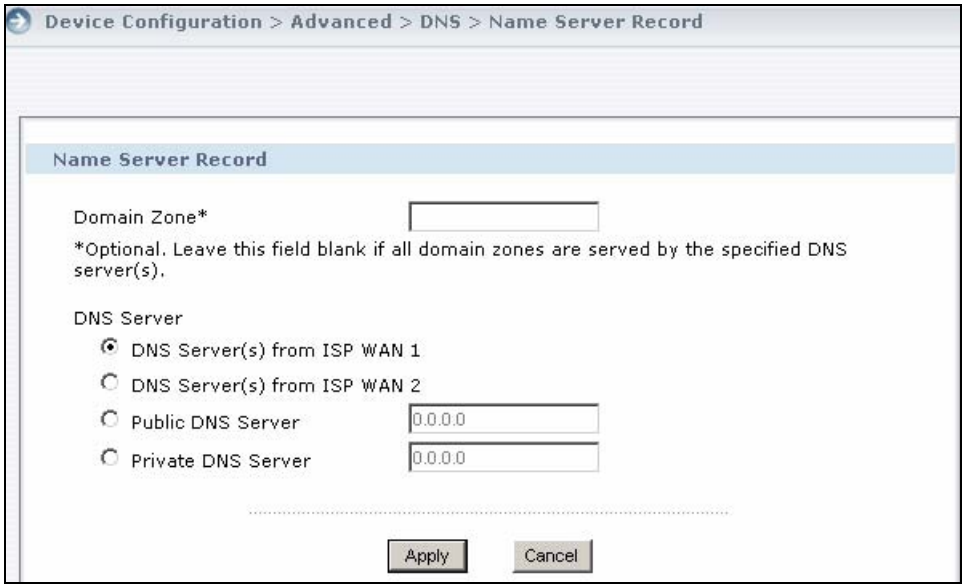
Table 86 Device Operation > Device Configuration > Advanced > DNS > Name Server Record

LABEL	DESCRIPTION
#	This is the number of an individual entry.
Domain Zone	A domain zone is a fully qualified domain name without the host. For example, zyxel.com.tw is the domain zone for the www.zyxel.com.tw fully qualified domain name.
From	This field displays whether the IP address of a DNS server is from a WAN interface (and which it is) or specified by the user.
DNS Server	This is the IP address of a DNS server.
Add	Click **Add** to display a screen where you can create a name server record.
Move Up	Click the icon to move the record up in the list.
Move Down	Click the icon to move the record down in the list.
Add Before Record No.	Enter the index number of the entry before which you want to insert a new entry. Click **Add** to create the entry.
Remove	Click **Remove** to delete an existing record. A window display asking you to confirm that you want to delete the record. Note that subsequent records move up by one when you take this action.

7.9.1 Add/Edit a Name Server Record

Use this screen to create or edit a name server record.

Figure 97 Device Operation > Device Configuration > Advanced > DNS > Name Server Record > Add/Edit


Device Configuration > Advanced > DNS > Name Server Record
Name Server Record
Domain Zone*
*Optional. Leave this field blank if all domain zones are served by the specified DNS server(s).
DNS Server
DNS Server(s) from ISP WAN 1
DNS Server(s) from ISP WAN 2
Public DNS Server
0.0.0.0
Private DNS Server
0.0.0.0
Apply
Cancel

The following table describes the labels in this screen.

Table 87 Device Operation > Device Configuration > Advanced > DNS > Name Server Record > Add/Edit

LABEL	DESCRIPTION
Domain Zone	This field is optional. A domain zone is a fully qualified domain name without the host. For example, zyxel.com.tw is the domain zone for the www.zyxel.com.tw fully qualified domain name. For example, whenever the device receives needs to resolve a zyxel.com.tw domain name, it can send a query to the recorded name server IP address. Leave this field blank if all domain zones are served by the specified DNS server(s).
DNS Server	Select the **DNS Server(s) from ISP WAN 1** or **DNS Server(s) from ISP WAN 2** radio button if your ISP dynamically assigns DNS server information. The fields below display the (read-only) DNS server IP address(es) that the ISP assigns. **N/A** displays for any DNS server IP address fields for which the ISP does not assign an IP address. **N/A** displays for all of the DNS server IP address fields if the device has a fixed WAN IP address. Select **Public DNS Server** if you have the IP address of a DNS server. The IP address must be public or a private address on your local LAN. Enter the DNS server's IP address in the field to the right. **Public DNS Server** entries with the IP address set to 0.0.0.0 are not allowed. Select **Private DNS Server** if the DNS server has a private IP address and is located behind a VPN peer. Enter the DNS server's IP address in the field to the right. With a private DNS server, you must also configure the first DNS server entry in the **DNS LAN** screen to use **DNS Relay**. You must also configure a VPN rule since the device uses a VPN tunnel when it relays DNS queries to the private DNS server. The rule must include the LAN IP address of the device as a local IP address and the IP address of the DNS server as a remote IP address. **Private DNS Server** entries with the IP address set to 0.0.0.0 are not allowed.

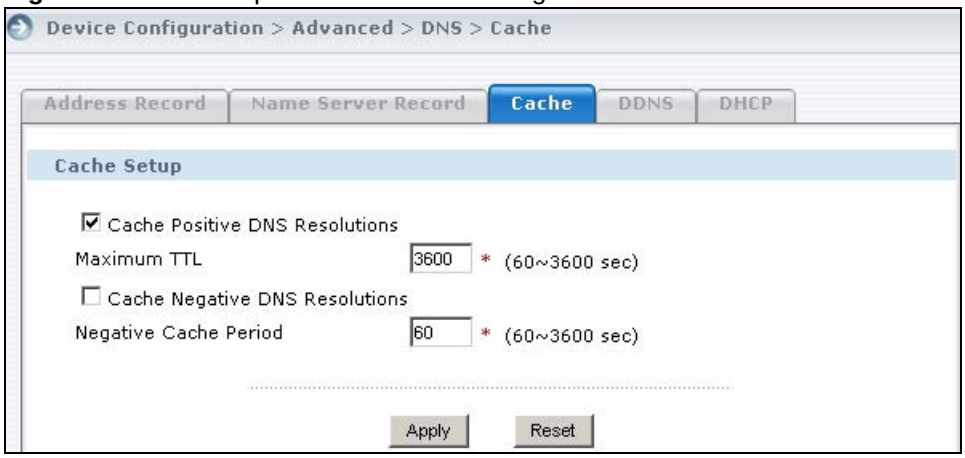
Table 87 Device Operation > Device Configuration > Advanced > DNS > Name Server Record > Add/Edit (continued)

LABEL	DESCRIPTION
Apply	Click **Apply** to save your changes back to the device.
Cancel	Click **Cancel** to exit this screen without saving.

7.10 Cache

Use this screen to configure a device's DNS caching. To open this screen, click a device, click **Device Operation** and then click **Device Configuration** > **Advanced** > **DNS** > **Cache** in the navigation panel.

Figure 98 Device Operation > Device Configuration > Advanced > DNS > Cache



The following table describes the labels in this screen.

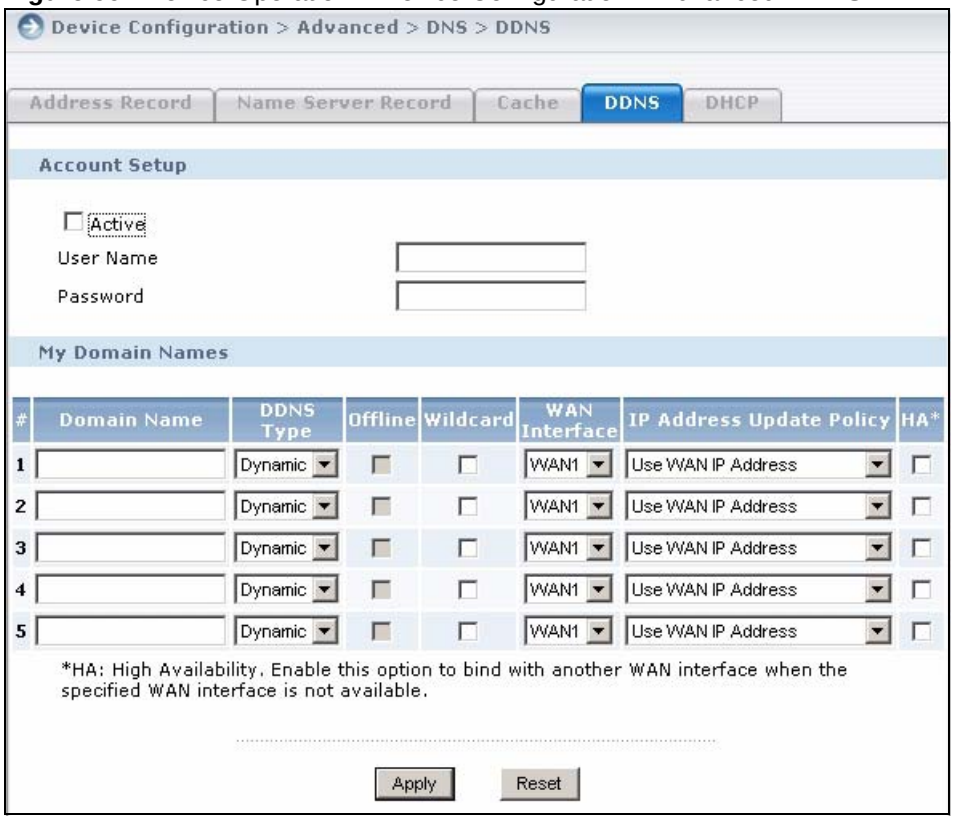
Table 88 Device Operation > Device Configuration > Advanced > DNS > Cache

LABEL	DESCRIPTION
Cache Setup	
Cache Positive DNS Resolutions	Select the check box to record the positive DNS resolutions in the cache. Caching positive DNS resolutions helps speed up the device's processing of commonly queried domain names and reduces the amount of traffic that the device sends out to the WAN.
Maximum TTL	Type the maximum time to live (TTL) (60 to 3600 seconds). This sets how long the device is to allow a positive resolution entry to remain in the DNS cache before discarding it.
Cache Negative DNS Resolutions	Caching negative DNS resolutions helps speed up the device's processing of commonly queried domain names (for which DNS resolution has failed) and reduces the amount of traffic that the device sends out to the WAN.
Negative Cache Period	Type the time (60 to 3600 seconds) that the device is to allow a negative resolution entry to remain in the DNS cache before discarding it.
Apply	Click **Apply** to save your changes back to the device.
Reset	Click **Reset** to begin configuring this screen afresh.

7.11 DDNS

Use this screen to configure your Dynamic DNS (DDNS) on the device. To open this screen, click a device, click **Device Operation** in the menu bar and then click **Device Configuration** > **Advanced** > **DNS** > **DDNS**.

Figure 99 Device Operation > Device Configuration > Advanced > DNS > DDNS


Device Configuration > Advanced > DNS > DDNS
Address Record
Name Server Record
Cache
DDNS
DHCP
Account Setup
Active
User Name
Password
My Domain Names
Domain Name DDNS Type Offline Wildcard WAN Interface IP Address Update Policy HA*
1 Dynamic WAN1 Use WAN IP Address
2 Dynamic WAN1 Use WAN IP Address
3 Dynamic WAN1 Use WAN IP Address
4 Dynamic WAN1 Use WAN IP Address
5 Dynamic WAN1 Use WAN IP Address
*HA: High Availability. Enable this option to bind with another WAN interface when the specified WAN interface is not available.
Apply
Reset

The following table describes the labels in this screen.

Table 89 Device Operation > Device Configuration > Advanced > DNS > DDNS

LABEL	DESCRIPTION
Account Setup	
Active	Select this check box to use dynamic DNS.
User Name	Enter your user name. You can use up to 31 alphanumeric characters (and the underscore). Spaces are not allowed.
Password	Enter the password associated with the user name above. You can use up to 31 alphanumeric characters (and the underscore). Spaces are not allowed.
My Domain Names	
#	This is the number of an individual entry.
Domain Name	Enter the host names in these fields.
DDNS Type	Select the type of service that you are registered for from your Dynamic DNS service provider. Select **Dynamic** if you have the Dynamic DNS service. Select **Static** if you have the Static DNS service. Select **Custom** if you have the Custom DNS service.

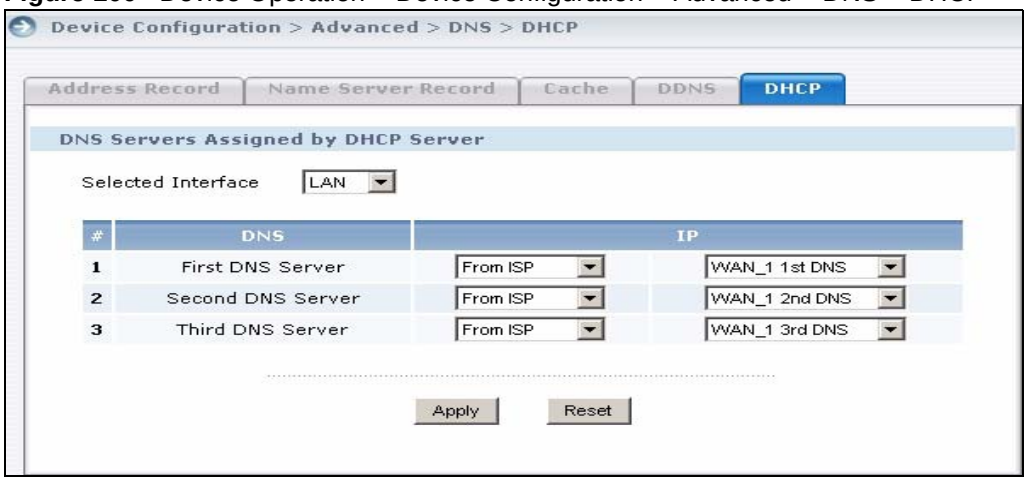
Table 89 Device Operation > Device Configuration > Advanced > DNS > DDNS (continued)

LABEL	DESCRIPTION
Offline	This option is available when **Custom** is selected in the **DDNS Type** field. Check with your Dynamic DNS service provider to have traffic redirected to a URL (that you can specify) while you are off line.
Wildcard	Select the check box to enable DYNDNS Wildcard.
WAN Interface	Select the WAN port to use for updating the IP address of the domain name.
IP Address Update Policy	Select **Use WAN IP Address** to have the device update the domain name with the WAN port's IP address. Select **Use User-Defined** and enter the IP address if you have a static IP address. Select **Let DDNS Server Auto Detect** only when there are one or more NAT routers between the device and the DDNS server. This feature has the DDNS server automatically detect and use the IP address of the NAT router that has a public IP address. Note: The DDNS server may not be able to detect the proper IP address if there is an HTTP proxy server between the device and the DDNS server.
HA	Select this check box to enable the high availability (HA) feature. High availability has the device update a domain name with another port's IP address when the normal WAN port does not have a connection. If the WAN port specified in the **WAN Interface** field does not have a connection, the device will attempt to use the IP address of another WAN port to update the domain name. When the WAN ports are in the active/passive operating mode, the device will update the domain name with the IP address of whichever WAN port has a connection, regardless of the setting in the **WAN Interface** field. Disable this feature and the device will only update the domain name with an IP address of the WAN port specified in the **WAN Interface** field. If that WAN port does not have a connection, the device will not update the domain name with another port's IP address. Note: If you enable high availability, DDNS can also function when the device uses the dial backup port. DDNS does not function when the device uses traffic redirect.
Apply	Click **Apply** to save your changes back to the device.
Reset	Click **Reset** to begin configuring this screen afresh.

7.12 DHCP

Use this screen to configure the DNS server information that the device sends to DHCP clients on the LAN, DMZ or WLAN. To open this screen, click a device, click **Device Operation** in the menu bar and then click **Device Configuration** > **Advanced** > **DNS** > **DHCP** in the navigation panel.

Figure 100 Device Operation > Device Configuration > Advanced > DNS > DHCP



The following table describes the labels in this screen.

Table 90 Device Operation > Device Configuration > Advanced > DNS > DHCP

LABEL	DESCRIPTION
DNS Servers Assigned by DHCP Server	The device passes a DNS (Domain Name System) server IP address to the DHCP clients.
Selected Interface	Select an interface from the drop-down list box to configure the DNS servers for the specified interface.
#	This is the number of an individual entry.
DNS	These read-only labels represent the DNS servers.
IP	Select **From ISP** if your ISP dynamically assigns DNS server information (and the device's WAN IP address). Use the drop-down list box to select a DNS server IP address that the ISP assigns in the field to the right. Select **User-Defined** if you have the IP address of a DNS server. Enter the DNS server's IP address in the field to the right. If you chose **User-Defined**, but leave the IP address set to 0.0.0.0, **User-Defined** changes to **None** after you click **Apply**. If you set a second choice to **User-Defined**, and enter the same IP address, the second **User-Defined** changes to **None** after you click **Apply**. Select **DNS Relay** to have the device act as a DNS proxy. The device's LAN, DMZ or WLAN IP address displays in the field to the right (read-only). The device tells the DHCP clients on the LAN, DMZ or WLAN that the device itself is the DNS server. When a computer on the LAN, DMZ or WLAN sends a DNS query to the device, the device forwards the query to the device's system DNS server (configured in the **DNS System** screen) and relays the response back to the computer. You can only select **DNS Relay** for one of the three servers; if you select DNS Relay for a second or third DNS server, that choice changes to **None** after you click **Apply**. Select **None** if you do not want to configure DNS servers. You must have another DHCP sever on your LAN, or else the computers must have their DNS server addresses manually configured. If you do not configure a DNS server, you must know the IP address of a computer in order to access it.
Apply	Click **Apply** to save your changes back to the device.
Reset	Click **Reset** to begin configuring this screen afresh.

7.13 Remote MGMT

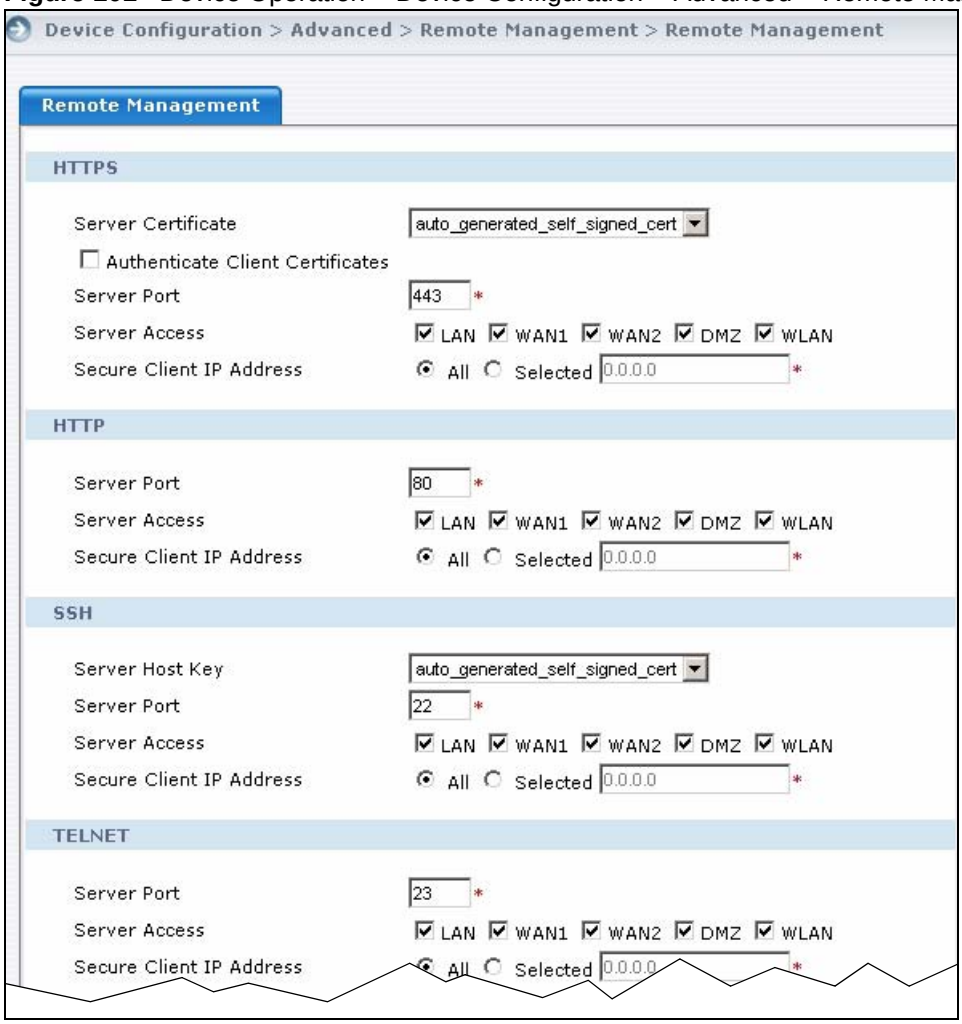
This section shows you how to configure the **Remote MGMT** screens. These screens may vary depending on which model you're configuring. Please see the device's User's Guide for more information about any of these screens or fields.

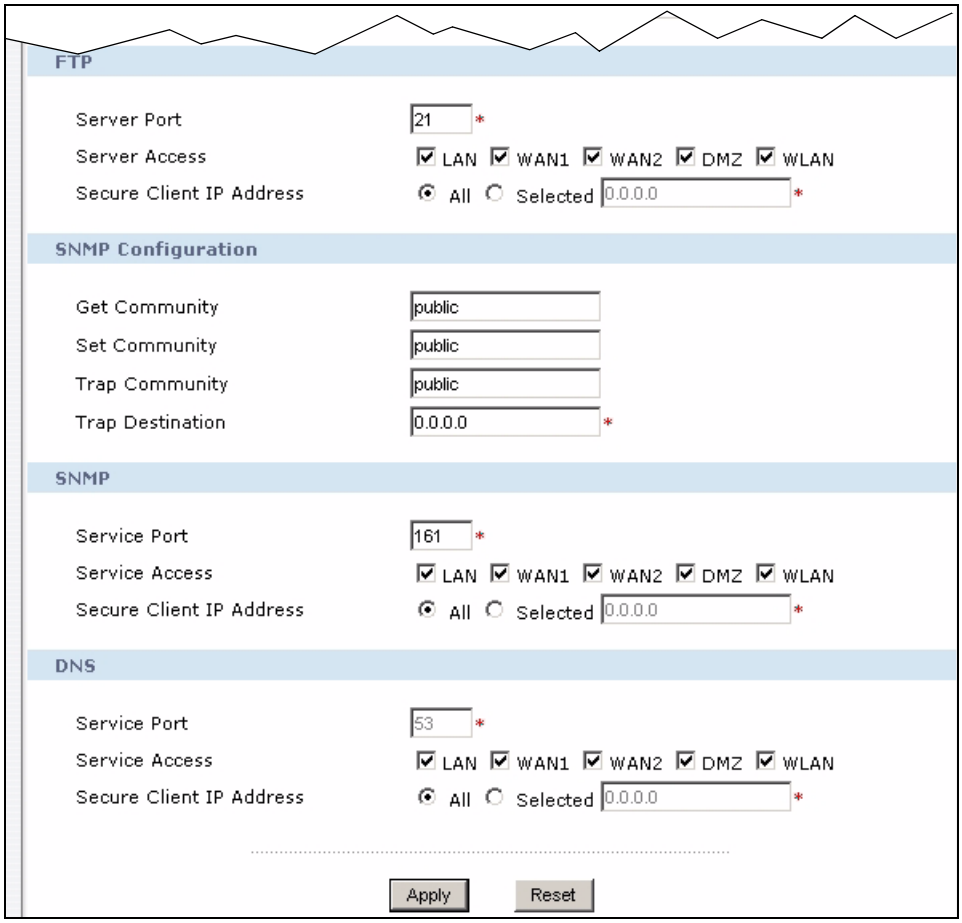
7.14 Remote MGMT

Use this screen to configure the device's remote management settings. To open this screen, click a device, click **Device Operation** and then click **Device Configuration** > **Advanced** > **Remote Management** in the navigation panel.

It is recommended that you disable Telnet and FTP when you configure SSH for secure connections.

Figure 101 Device Operation > Device Configuration > Advanced > Remote Management





The following table describes the labels in this screen.

Table 91 Device Operation > Device Configuration > Advanced > Remote Management

LABEL	DESCRIPTION
HTTPS	
Server Certificate	Select the **Server Certificate** that the device will use to identify itself. The device is the SSL server and must always authenticate itself to the SSL client (the computer which requests the HTTPS connection with the device).
Authenticate Client Certificates	Select **Authenticate Client Certificates** (optional) to require the SSL client to authenticate itself to the device by sending the device a certificate. To do that the SSL client must have a CA-signed certificate from a CA that has been imported as a trusted CA on the device.
Server Port	The HTTPS proxy server listens on port 443 by default. If you change the HTTPS proxy server port to a different number on the device, for example 8443, then you must notify people who need to access the device web configurator to use “https:// device IP Address:**8443**” as the URL.
Server Access	Select the interface(s) through which a computer may access the device using this service. You can allow only secure web configurator access by setting the **HTTP Server Access** field to **Disable** and setting the **HTTPS Server Access** field to an interface(s).

Table 91 Device Operation > Device Configuration > Advanced > Remote Management

LABEL	DESCRIPTION
Secure Client IP Address	A secure client is a “trusted” computer that is allowed to communicate with the device using this service. Select **All** to allow any computer to access the device using this service. Choose **Selected** to just allow the computer with the IP address that you specify to access the device using this service.
HTTP	
Server Port	You may change the server port number for a service if needed, however you must use the same port number in order to use that service for remote management.
Server Access	Select the interface(s) through which a computer may access the device using this service.
Secure Client IP Address	A secure client is a “trusted” computer that is allowed to communicate with the device using this service. Select **All** to allow any computer to access the device using this service. Choose **Selected** to just allow the computer with the IP address that you specify to access the device using this service.
SSH	
Server Host Key	Select the certificate whose corresponding private key is to be used to identify the device for SSH connections. You must have certificates already configured in the **My Certificates** screen.
Server Port	You may change the server port number for a service if needed, however you must use the same port number in order to use that service for remote management.
Server Access	Select the interface(s) through which a computer may access the device using this service.
Secure Client IP Address	A secure client is a “trusted” computer that is allowed to communicate with the device using this service. Select **All** to allow any computer to access the device using this service. Choose **Selected** to just allow the computer with the IP address that you specify to access the device using this service.
TELNET	
Server Port	You may change the server port number for a service if needed, however you must use the same port number in order to use that service for remote management.
Server Access	Select the interface(s) through which a computer may access the device using this service.
Secure Client IP Address	A secure client is a “trusted” computer that is allowed to communicate with the device using this service. Select **All** to allow any computer to access the device using this service. Choose **Selected** to just allow the computer with the IP address that you specify to access the device using this service.
FTP	
Server Port	You may change the server port number for a service if needed, however you must use the same port number in order to use that service for remote management.
Server Access	Select the interface(s) through which a computer may access the device using this service.
Secure Client IP Address	A secure client is a “trusted” computer that is allowed to communicate with the device using this service. Select **All** to allow any computer to access the device using this service. Choose **Selected** to just allow the computer with the IP address that you specify to access the device using this service.

Table 91 Device Operation > Device Configuration > Advanced > Remote Management

LABEL	DESCRIPTION
SNMP Configuration	
Get Community	Enter the **Get Community**, which is the password for the incoming Get and GetNext requests from the management station. The default is public and allows all requests.
Set Community	Enter the **Set community**, which is the password for incoming Set requests from the management station. The default is public and allows all requests.
Trap Community	Type the trap community, which is the password sent with each trap to the SNMP manager. The default is public and allows all requests.
Trap Destination	Type the IP address of the station to send your SNMP traps to.
SNMP	
Service Port	You may change the server port number for a service if needed, however you must use the same port number in order to use that service for remote management.
Service Access	Select the interface(s) through which a computer may access the device using this service.
Secure Client IP Address	A secure client is a “trusted” computer that is allowed to communicate with the device using this service. Select **All** to allow any computer to access the device using this service. Choose **Selected** to just allow the computer with the IP address that you specify to access the device using this service.
DNS	
Server Port	The DNS service port number is 53 and cannot be changed here.
Service Access	Select the interface(s) through which a computer may send DNS queries to the device.
Secure Client IP Address	A secure client is a “trusted” computer that is allowed to send DNS queries to the device. Select **All** to allow any computer to send DNS queries to the device. Choose **Selected** to just allow the computer with the IP address that you specify to send DNS queries to the device.
Apply	Click **Apply** to save your customized settings and exit this screen.
Reset	Click **Reset** to begin configuring this screen afresh.

8

Device Log

This section shows you how to configure the **Device Log** screen. This screen may vary depending on which model you're configuring. Please see the device's User's Guide for more information about any of these screens or fields.

8.1 Device Log

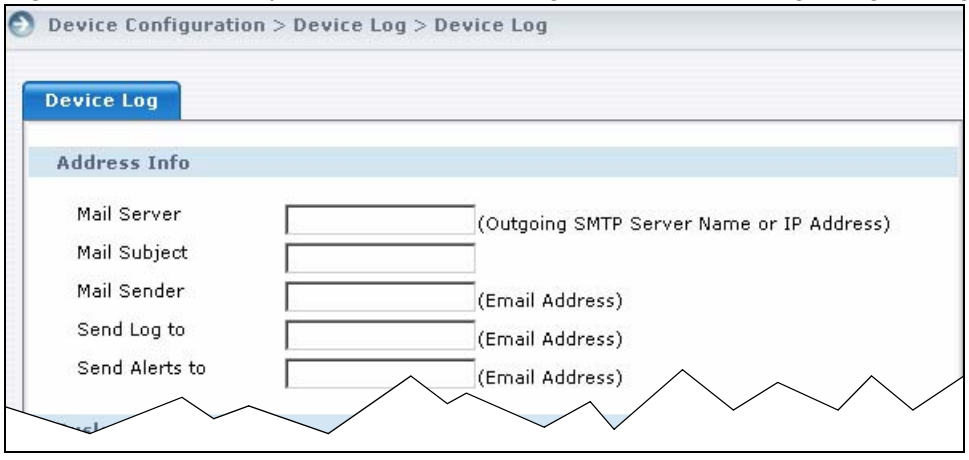
Use the **Logging Options** screen to configure to where the device is to send logs; the schedule for when the device is to send the logs and which logs and/or immediate alerts the device is to send.

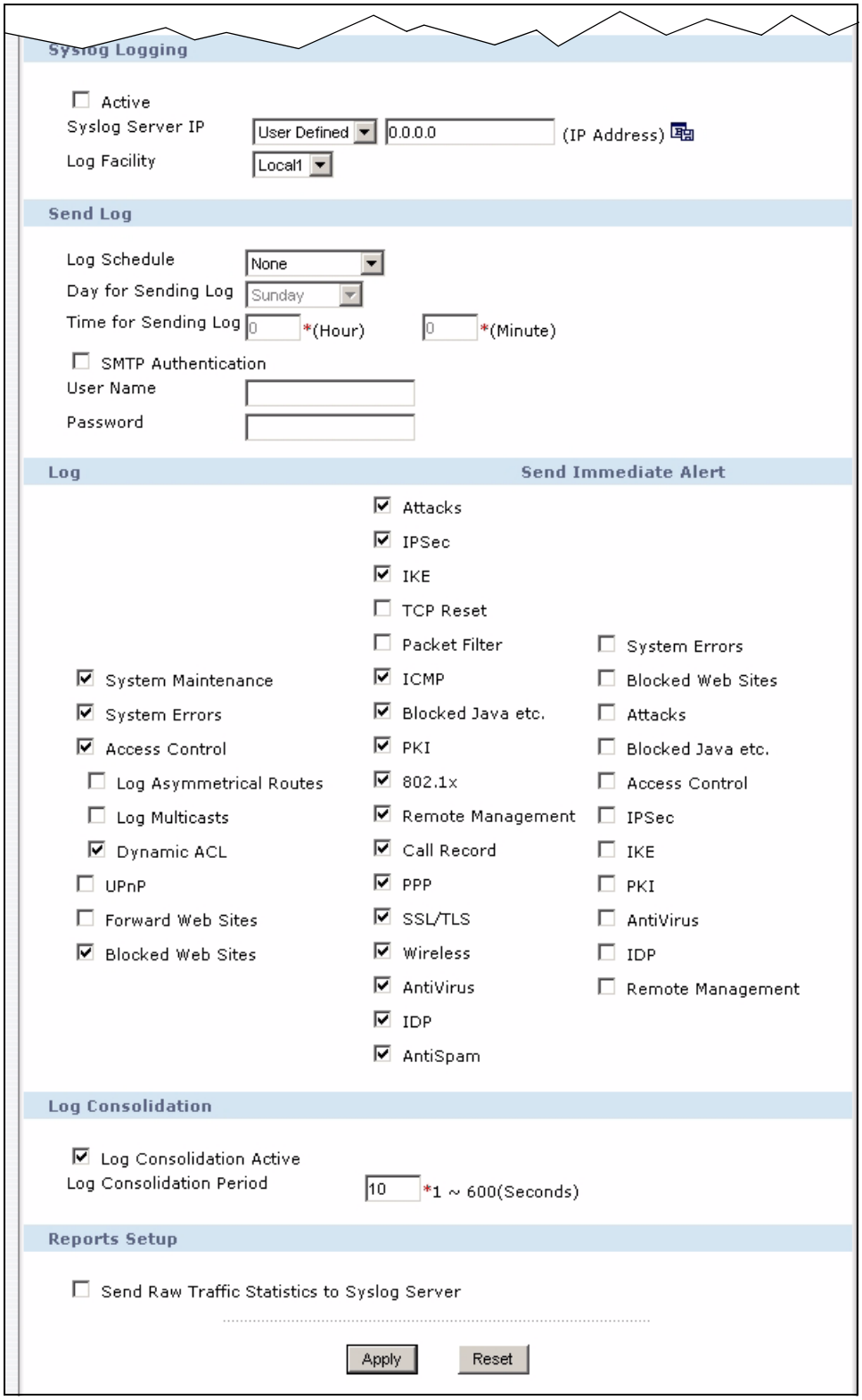
An alert is a type of log that warrants more serious attention. They include system errors, attacks (access control) and attempted access to blocked web sites or web sites with restricted web features such as cookies, active X and so on. Some categories such as **System Errors** consist of both logs and alerts. You may differentiate them by their color in the **Device** screen. Alerts display in red and logs display in black.

Alerts are e-mailed as soon as they happen. Logs may be e-mailed as soon as the log is full (see Log Schedule). Selecting many alert and/or log categories (especially Access Control) may result in many e-mails being sent.

To change a device's log settings, select a device, click **Device Operation** in the menu bar and then click **Device Configuration** > **Device Log** in the navigation panel. The screen appears as shown next.

Figure 102 Device Operation > Device Configuration > Device Log > Log Settings




Syslog Logging
Active
Syslog Server IP
User Defined
0.0.0.0
(IP Address)
Log Facility
Local1
Send Log
Log Schedule
None
Day for Sending Log
Sunday
Time for Sending Log
0
*(Hour)
0
*(Minute)
SMTP Authentication
User Name
Password
Log
Send Immediate Alert
System Maintenance
System Errors
Access Control
Log Asymmetrical Routes
Log Multicasts
Dynamic ACL
UPnP
Forward Web Sites
Blocked Web Sites
Attacks
IPSec
IKE
TCP Reset
Packet Filter
ICMP
Blocked Java etc.
PKI
802.1x
Remote Management
Call Record
PPP
SSL/TLS
Wireless
AntiVirus
IDP
AntiSpam
System Errors
Blocked Web Sites
Attacks
Blocked Java etc.
Access Control
IPSec
IKE
PKI
AntiVirus
IDP
Remote Management
Log Consolidation
Log Consolidation Active
Log Consolidation Period
10
*1 ~ 600(Seconds)
Reports Setup
Send Raw Traffic Statistics to Syslog Server
Apply
Reset

The following table describes the labels in this screen.

Table 92 Device Operation > Device Configuration > Device Log > Log Settings

LABEL	DESCRIPTION
Address Info	
Mail Server	Enter the server name or the IP address of the mail server for the e-mail addresses specified below. If this field is left blank, logs and alert messages will not be sent via e-mail.
Mail Subject	Type a title that you want to be in the subject line of the log e-mail message that the device sends.
Mail Sender	Enter the e-mail address that you want to be in the from/sender line of the log e-mail message that the device sends. If you activate SMTP authentication, the e-mail address must be able to be authenticated by the mail server as well.
Send Log To	Logs are sent to the e-mail address specified in this field. If this field is left blank, logs will not be sent via e-mail.
Send Alerts To	Alerts are sent to the e-mail address specified in this field. If this field is left blank, alerts will not be sent via e-mail.
Syslog Logging	Syslog logging sends a log to Vantage Report or to an external syslog server used to store logs.
Active	Click **Active** to enable syslog logging.
Syslog Server IP Address	Select an instance of Vantage Report (see Section 21.6 on page 306) or select **User Define** and enter the server IP address of the syslog server that will log the selected categories of logs.
Log Facility	Select a location from the drop down list box. The log facility allows you to log the messages to different files in the syslog server. Refer to the documentation of your syslog program for more details.
Send Log	
Log Schedule	This drop-down menu is used to configure the frequency of log messages being sent as E-mail: • Daily • Weekly • Hourly • When Log is Full • None. If you select **Weekly** or **Daily**, specify a time of day when the E-mail should be sent. If you select **Weekly**, then also specify which day of the week the E-mail should be sent. If you select **When Log is Full**, an alert is sent when the log fills up. If you select **None**, no log messages are sent
Day for Sending Log	Use the drop down list box to select which day of the week to send the logs.
Time for Sending Log	Enter the time of the day in 24-hour format (for example 23:00 equals 11:00 pm) to send the logs.
SMTP Authentication	SMTP (Simple Mail Transfer Protocol) is the message-exchange standard for the Internet. SMTP enables you to move messages from one e-mail server to another. Select the check box to activate SMTP authentication. If mail server authentication is needed but this feature is disabled, you will not receive the e-mail logs.
User Name	Enter the user name (up to 31 characters) (usually the user name of a mail account).
Password	Enter the password associated with the user name above.
Log	Select the categories of logs that you want to record. Logs include alerts.

Table 92 Device Operation > Device Configuration > Device Log > Log Settings (continued)

LABEL	DESCRIPTION
Send Immediate Alert	Select the categories of alerts for which you want the device to instantly e-mail alerts to the e-mail address specified in the **Send Alerts To** field.
Log Consolidation	
Log Consolidation Active	Some logs (such as the Attacks logs) may be so numerous that it becomes easy to ignore other important log messages. Select this check box to merge logs with identical messages into one log.
Log Consolidation Period	Specify the time interval during which the device merges logs with identical messages into one log.
Reports Setup	
Send Raw Traffic Statistics to Syslog Server	Select the check box if you want the device to send traffic logs to Vantage Report or the specified syslog server. The device generates a traffic log when a "session" is terminated. A traffic log summarizes the session's type, when it started and stopped the amount of traffic that was sent and received and so on. An external log analyzer can reconstruct and analyze the traffic flowing through the device after collecting the traffic logs. Select this to view device's traffic report.
Apply	Click **Apply** to save your customized settings and exit this screen.
Reset	Click **Reset** to begin configuring this screen afresh.

9

Device Configuration Management

9.1 Synchronization

Data inconsistencies may occur if device configurations are made directly to the device instead of in Vantage CNM. Use this screen to resolve any data inconsistencies between the selected device and Vantage CNM. To use this screen, select a device, click **Device Operation** in the menu bar and click **Configuration Management > Synchronize** in the navigation panel.

If you are not sure how to resolve inconsistencies between the device and Vantage CNM, you might access the device's web configurator and compare the settings in the web configurator to the settings in Vantage CNM before you use this function.

Figure 103 Device Operation > Configuration Management > Synchronization

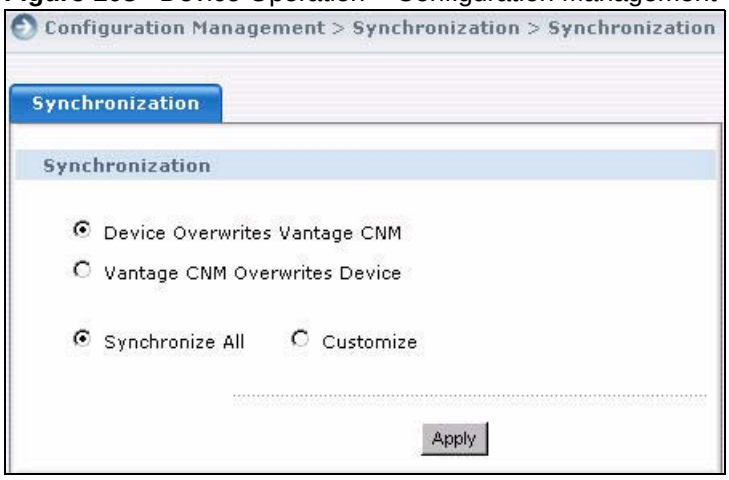
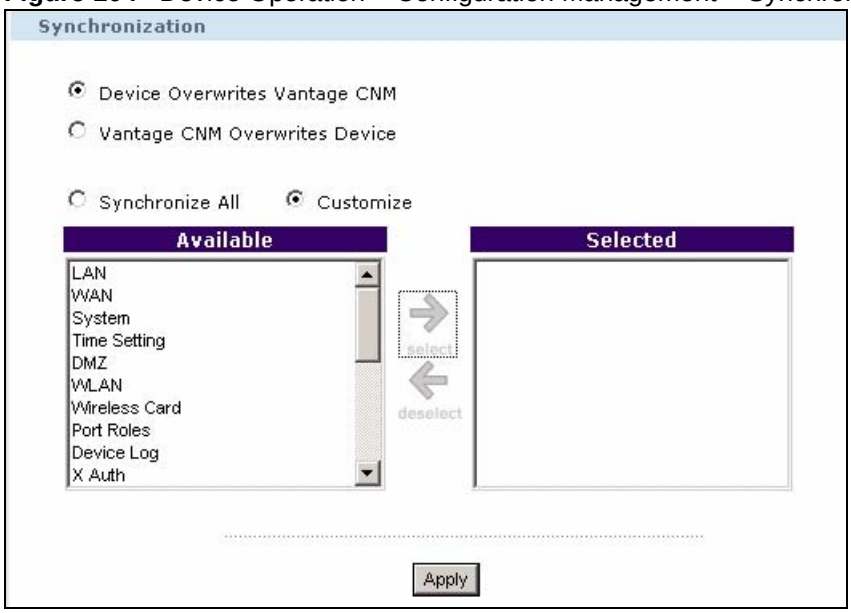


Figure 104 Device Operation > Configuration Management > Synchronization (Customize)



The following table describes the fields in this screen.

Table 93 Device Operation > Configuration Management > Synchronization

LABEL	DESCRIPTION
Device Overwrites Vantage CNM	Select this radio button to have Vantage CNM pull all current device configurations into Vantage CNM. The current device configuration "overwrites" Vantage CNM configurations.
Vantage CNM Overwrites Device	Select this radio button to have Vantage CNM push all current configurations from Vantage CNM to the device. The current device configuration is then reset to the configuration settings that Vantage CNM contains.
Synchronize All	Select this radio button to synchronize all settings between Vantage CNM and the device.
Customize	Select this radio button to display more fields you can specify which setting(s) to be synchronized. Select an item from the **Available** list box and click **select** to synchronize the setting. Select an item from the **Selected** list box and click **deselect** If you don't want to synchronize the setting.
Apply	Click this to save your settings in Vantage CNM.

9.2 Configuration File Management

Once your device is configured and functioning properly, it is highly recommended that you back up your configuration file before making configuration changes. The backup configuration file will be useful in case you need to return to your previous settings.

Use this menu item to manage, back up and restore configuration files for specific devices or for multiple devices in a specific folder. If you back up multiple devices in a specific folder, you can manage and restore the configuration files at the folder level or individually by device.

You can back up configuration files to Vantage CNM or to your computer. If you back up a configuration file to Vantage CNM, you can only restore that configuration file to that device, even if other devices are the same model and are running the same firmware.

Before you restore a configuration file, make sure the new configuration does not prevent you from managing the device remotely, unless that is desired.

Make sure you restore a configuration file to an appropriate model. Otherwise, you may damage the device or lock yourself out.

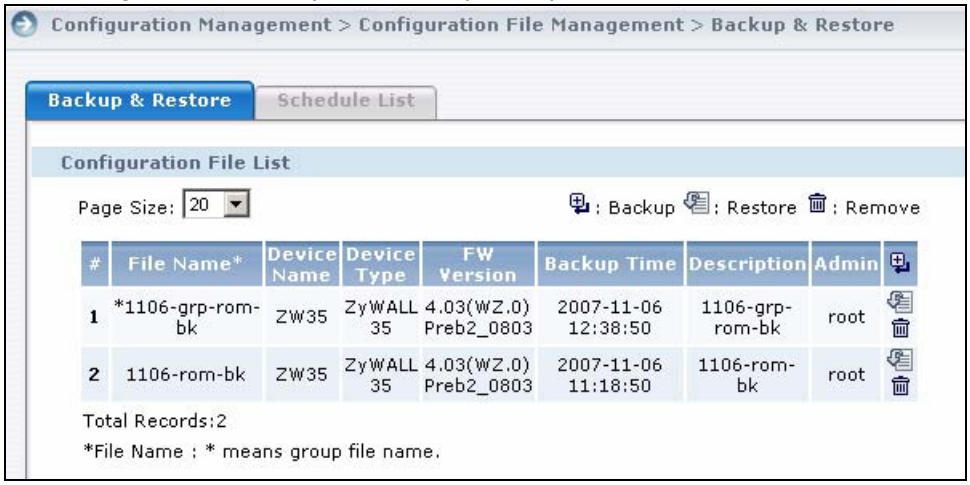
You can create your own configuration file alias in Vantage CNM. This may make it easier to distinguish between configuration files.

The menu item displays different screens depending on whether you selected a device or a folder before you clicked this menu item.

9.2.1 Backup & Restore (Device)

Use this screen to back up and restore configuration files for a specific device. The configuration files may be stored in the Vantage CNM server or on the computer from which you access Vantage CNM. To open this screen, select a device, click **Device Operation** in the menu bar and then click **Configuration Management** > **Configuration File Management** > **Backup & Restore** in the navigation panel.

Figure 105 Device Operation > Configuration Management > Configuration File Management > Backup & Restore (Device)


Configuration Management > Configuration File Management > Backup & Restore
Backup & Restore
Schedule List
Configuration File List
Page Size: 20
: Backup : Restore : Remove
File Name* Device Name Device Type FW Version Backup Time Description Admin
1 *1106-grp-rom-bk ZW35 ZyWALL 35 4.03(WZ.0) Preb2_0803 2007-11-06 12:38:50 1106-grp-rom-bk root
2 1106-rom-bk ZW35 ZyWALL 35 4.03(WZ.0) Preb2_0803 2007-11-06 11:18:50 1106-rom-bk root
Total Records:2
*File Name : * means group file name.

The following table describes the fields in this screen.

Table 94 Device Operation > Configuration Management > Configuration File > Backup & Restore (Device)

TYPE	DESCRIPTION
Configuration File List	
Page Size	Select this from the list box to set up how many records you want to see in each page.

Table 94 Device Operation > Configuration Management > Configuration File > Backup & Restore (Device) (continued)

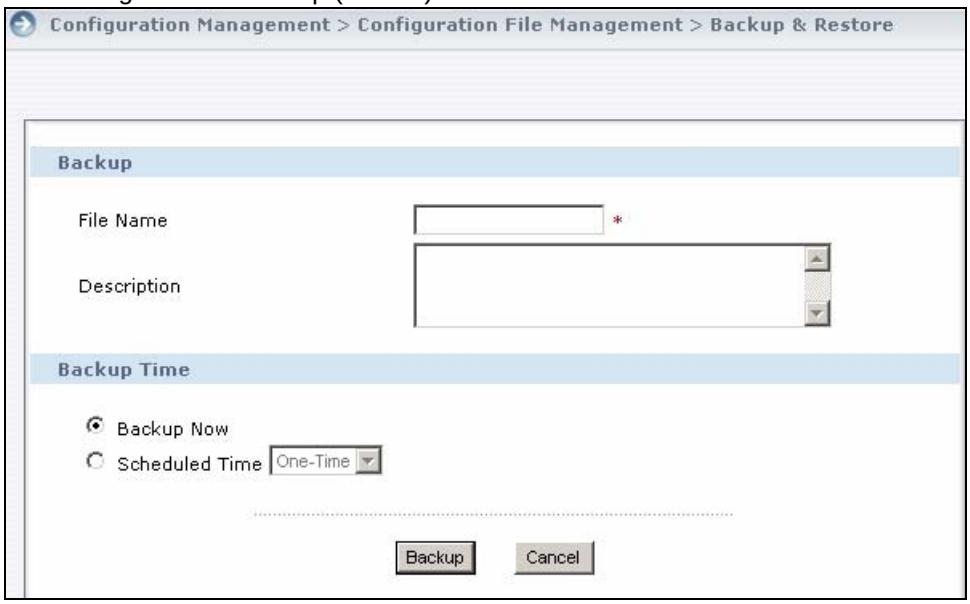
TYPE	DESCRIPTION
#	This is the number of an individual entry.
File Name	This displays the name of the configuration file. The name with * in the beginning means a related group backup (by selecting its folder) was performed.
Device Name	This displays the name of the device that was backed up.
Device Type	This displays the type of the device that was backed up.
FW Version	This displays the firmware version of the device when the configuration file was backed up.
Backup Time	This field displays the date of backup of the configuration file.
Description	This displays a description that was entered at the time of file backup.
Admin	This field displays the administrator who performed the backup of the configuration file.
Backup	Click **Backup** to display a screen where you can back up the configuration file for the device.
Restore	Click **Restore** to restore an existing configuration file to the device.
Remove	Click **Remove** to remove an existing configuration file from the Vantage CNM server.
Total Records	This entry displays the total number of records on the current page of the file list.

9.2.2 Backup a Device

Use this screen to manage configuration files uploaded to Vantage CNM for the selected device. After a backup task is applied, you can check the status in **Log & Report** > **Operation Report** > **Configuration File Backup & Restore Report**. To open this screen, click **Backup** in the **Device Operation** > **Configuration Management > Configuration File Management > Backup & Restore** screen.

You can not apply the second scheduled backup to the device before its last scheduled backup is completed.

Figure 106 Device Operation > Configuration Management > Configuration File Management > Backup (Device)



The following table describes the fields in this screen

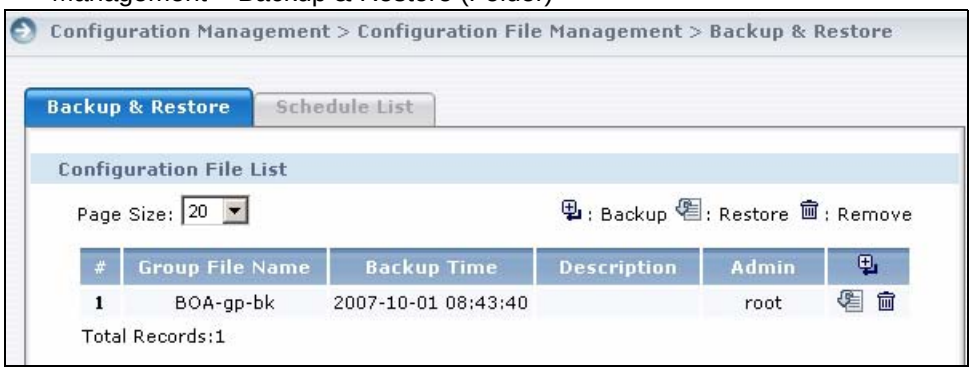
Table 95 Device Operation > Configuration Management > Configuration File Management > Backup & Restore > Backup (Device)

TYPE	DESCRIPTION
Backup	
File Name	Type in the name of the configuration file you want to create. The name must be 1-20 characters long, and you cannot use spaces or the \ / : * ? < > | “ characters. Vantage CNM automatically appends a string of numbers followed by “.rom” to this name.
Description	Enter a descriptive note for the file.
Backup Time	
Backup Now	Select this radio box to perform the backup after you click **Backup**.
Scheduled Time	Select this radio box to define a time or a periodical time Vantage CNM server automatically perform backup for this device. Select **One Time** from the list box if you want this backup schedule is applied one time, or select **Weekly** or **Monthly** to specify how often you want the backup schedule is applied periodically. Select the calendar to specify a date for the backup schedule. Select a time from **O’clock** to specify a time for the backup schedule.
Backup	Click this to back up the configuration file for the device.
Cancel	Click **Cancel** to close this screen without applying any changes.

9.2.3 Backup & Restore (Folder)

Use this screen to manage or restore configuration files uploaded to Vantage CNM for multiple devices in the selected folder. You cannot use this screen to manage or restore configuration files uploaded to Vantage CNM for a specific device (in other words, using Figure 106 on page 217), even if that device is in the folder. To open this screen, select an active folder, click **Device Operation** in the menu bar and click **Configuration Management > Configuration File Management** > **Backup & Restore** in the navigation panel.

Figure 107 Device Operation > Configuration Management > Configuration File Management > Backup & Restore (Folder)


Configuration Management > Configuration File Management > Backup & Restore
Backup & Restore
Schedule List
Configuration File List
Page Size: 20
: Backup : Restore : Remove
Group File Name Backup Time Description Admin
1 BOA-gp-bk 2007-10-01 08:43:40 root
Total Records:1

The following table describes the fields in this screen.

Table 96 Device Operation > Configuration Management > Configuration File Management > Backup & Restore (Folder)

TYPE	DESCRIPTION
Page Size	Select this from the list box to set up how many records you want to see in each page.
#	This is the number of an individual entry.
Group File Name	This displays the name of the set of configuration files.
Backup Time	This field displays the date of backup of the set of configuration files.
Description	This field displays the description of the set of configuration files.
Admin	This field displays the administrator who performed the backup of the configuration files.
Backup	Click this to display a screen where you can perform device(s) configuration backup.
Restore	Click this to restore a configuration file to device(s).
Remove	Click this to remove the selected set(s) from the Vantage CNM server.
Total Records	This entry displays the total number of records on the current page of the file list.

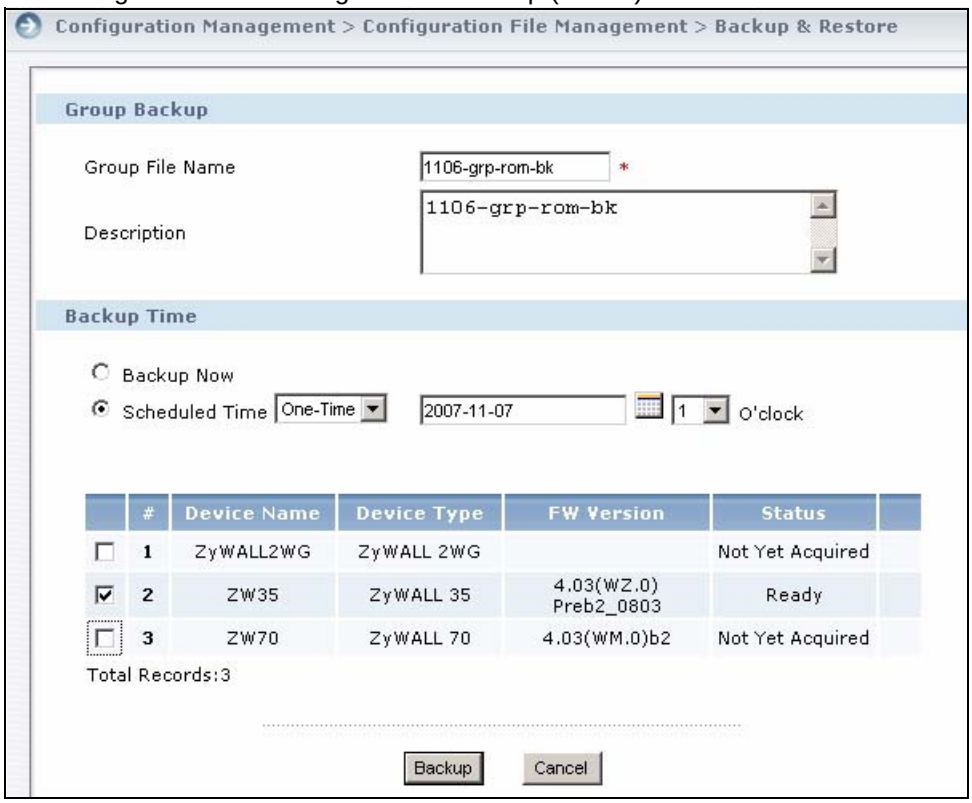
9.2.4 Group Backup (Folder)

Use this screen to backup configuration files for one or more devices in the selected set of configuration files. To open this screen, click Backup in the **Device Operation** > **Configuration Management > Configuration File Management** screen for the selected folder.

You have to select device(s) with **Ready** in the **Status** field before you can backup any configuration files.

The backup takes some time depending on your network environment.

Figure 108 Device Operation > Configuration Management >Configuration Management > Configuration File Management > Backup (Folder)



The following table describes the fields in this screen.

Table 97 Device Operation > Configuration Management > Configuration File Management > Backup (Folder)

TYPE	DESCRIPTION
Group Backup	
Group File Name	Enter the name of the set of configuration files. The name must be 1-20 characters long, and you cannot use spaces or the \ / : * ? < > | “ characters. This name is also used in the name of each configuration file in the set, if you look at the configuration files for a specific device in the folder. Vantage CNM automatically appends a string of numbers followed by “.rom” to this name.
Description	Type a description of the file backup.
Backup Time	

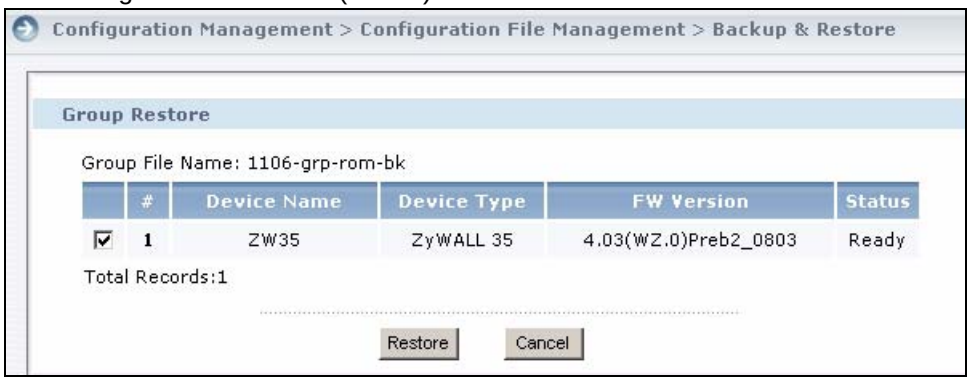
Table 97 Device Operation > Configuration Management > Configuration File Management > Backup (Folder) (continued)

TYPE	DESCRIPTION
Backup Now	Select this radio box to perform the backup after you click **Backup**.
Scheduled Time	Select this radio box to define a time or a periodical time Vantage CNM server automatically perform backup for the device(s). Select **One Time** from the list box if you want this backup schedule is applied one time, or select **Weekly** or **Monthly** to specify how often you want the backup schedule is applied periodically. Select the calendar to specify a date for the backup schedule. Select a time from **O'clock** to specify a time for the backup schedule.
#	This is the number of an individual entry.
Device Name	This displays the name of the device.
Device Type	This displays the type of the device.
FW Version	This displays the firmware version of the device.
Status	This displays the current status of the device. You can only backup the configuration file of a device that is **Ready**.
Total Records	This entry displays the total number of records on the current page of the device list.
Backup	Select the check box next to one or more devices and click this to back up the configuration files for the selected devices.
Cancel	Click this to close this screen without applying any changes.

9.2.5 Group Restore (Folder)

Use this screen to restore configuration files for one or more devices in the specified folder. The configuration files must be available in the Vantage CNM server. To open this screen, select an existing configuration file and click **Restore** in the **Device Operation** > **Configuration Management** > **Configuration File Management** screen.

Figure 109 Device Operation > Configuration Management > Configuration File Management > Restore (Folder)


Configuration Management > Configuration File Management > Backup & Restore
Group Restore
Group File Name: 1106-grp-rom-bk
Device Name Device Type FW Version Status
1 ZW35 ZyWALL 35 4.03(WZ.0)Preb2_0803 Ready
Total Records:1
Restore
Cancel

The following table describes the fields in this screen.

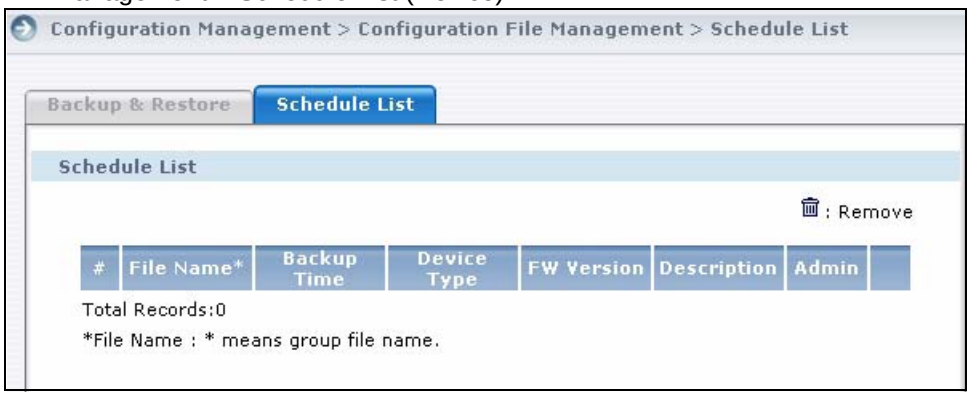
Table 98 Device Operation > Configuration Management > Configuration File Management > Restore (Folder)

TYPE	DESCRIPTION
Group Restore	
#	This is the number of an individual entry.
Device Name	This displays the name of the device that was backed up.
Device Type	This displays the type of the device that was backed up.
FW Version	This displays the firmware version of the device when the configuration file was backed up.
Status	This displays the current status of the device. You can only back up the configuration file of a device that is **Ready**.
Restore	Select the check box next to one or more devices and click this to restore the configuration files for the selected devices. Note: You have to select a device with **Ready** status in the **Status** field before you can restore any configuration files.
Cancel	Click this to return to the previous screen without applying any changes.

9.3 Schedule List (Device)

Use this screen to see or delete the scheduled configuration backups that have not performed yet. To open this screen, select a device, click **Device Operation** in menu bar and then click **Configuration Management** > **Configuration File Management** > **Schedule List**.

Figure 110 Device Operation > Configuration Management > Configuration File Management > Schedule List (Device)


Configuration Management > Configuration File Management > Schedule List
Backup & Restore
Schedule List
Schedule List
: Remove
File Name* Backup Time Device Type FW Version Description Admin
Total Records:0
*File Name : * means group file name.

The following table describes the fields in this screen.

Table 99 Device Operation > Configuration Management > Configuration File Management > Schedule List (Device)

TYPE	DESCRIPTION
Schedule List	
#	This is the number of an individual entry.
File Name	This displays the name of the configuration file.

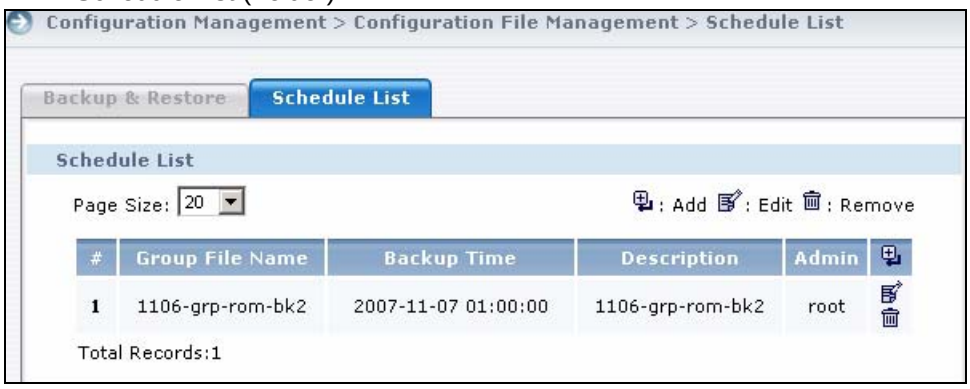
Table 99 Device Operation > Configuration Management > Configuration File Management > Schedule List (Device) (continued)

TYPE	DESCRIPTION
Device Name	This displays the name of the device that will be backed up.
Device Type	This displays the type of the device that will be backed up.
FW Version	This displays the firmware version of the device.
Description	This displays a description that was entered when the backup schedule was set.
Admin	This field displays the administrator who set the backup schedule.
Remove	Click **Remove** to remove a scheduled backup from the Vantage CNM server.
Total Records	This entry displays the total number of records on the current page of the file list.

9.4 Schedule List (Folder)

Use this screen to see or delete the scheduled configuration backup for a group that has not performed yet. To open this screen, select a folder, and then click **Configuration Management** > **Configuration File Management** > **Schedule List**.

Figure 111 Device Operation > Configuration Management > Configuration File Management > Schedule List (Folder)


Configuration Management > Configuration File Management > Schedule List
Backup & Restore
Schedule List
Schedule List
Page Size: 20
: Add : Edit : Remove
Group File Name Backup Time Description Admin
1 1106-grp-rom-bk2 2007-11-07 01:00:00 1106-grp-rom-bk2 root
Total Records:1

The following table describes the fields in this screen.

Table 100 Device Operation > Configuration Management > Configuration File Management > Schedule List (Folder)

TYPE	DESCRIPTION
Page Size	Select this from the list box to set up how many records you want to see in each page.
Schedule List	
#	This is the number of an individual entry.
Group File Name	This displays the name of the set of configuration files.
Backup Time	This displays the schedule when the backup will be performed.
Description	This displays a description that was entered when the backup schedule was set.
Admin	This field displays the administrator who set the backup schedule.

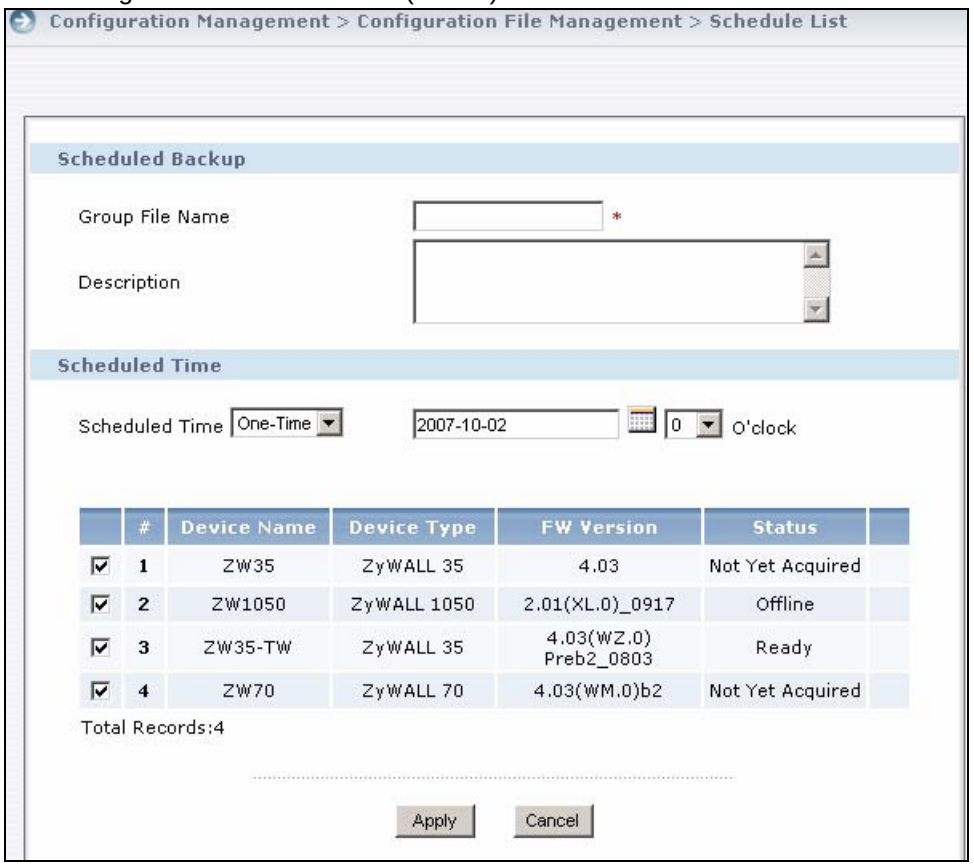
Table 100 Device Operation > Configuration Management > Configuration File Management > Schedule List (Folder) (continued)

TYPE	DESCRIPTION
Add	Click this to add a backup schedule for this folder.
Edit	Click this to modify an existing backup schedule.
Remove	Click this to remove a scheduled backup from the Vantage CNM server.
Total Records	This entry displays the total number of records on the current page of the file list.

9.4.1 Add/Edit Schedule List (Folder)

Use this screen to add or edit an backup schedule for one or more devices in the selected set of configuration files. To open this screen, select an active folder, click **Configuration Management** > **Configuration File Management** > **Schedule List**, and then click **Add**.

Figure 112 Device Operation > Configuration Management > Configuration File Management > Schedule List (Folder)



The following table describes the fields in this screen.

Table 101 Device Operation > Configuration Management > Configuration File Management > Schedule List (Folder)

TYPE	DESCRIPTION
Scheduled Backup	
Group File Name	Enter the name of the set of configuration files. The name must be 1-20 characters long, and you cannot use spaces or the \ / : * ? < > | " characters. This name is also used in the name of each configuration file in the set, if you look at the configuration files for a specific device in the folder. Vantage CNM automatically appends a string of numbers followed by ".rom" to this name.
Description	Type a descriptive note of the group file backup.
Scheduled Time	
Scheduled Time	Select this radio box to define a time or a periodical time Vantage CNM server automatically perform backup for the device(s). Select **One Time** from the list box if you want this backup schedule is applied one time, or select **Weekly** or **Monthly** to specify how often you want the backup schedule is applied periodically. Select the calendar to specify a date for the backup schedule. Select a time from **O'clock** to specify a time for the backup schedule.
#	This is the number of an individual entry.
Device Name	This displays the name of the device.
Device Type	This displays the type of the device.
FW Version	This displays the firmware version of the device.
Status	This displays the current status of the device. You can only backup the configuration file of a device that is **Ready**. Note: You have to select device(s) with **Ready** in the **Status** field before you can backup any configuration files.
Total Records	This entry displays the total number of records on the current page of the device list.
Apply	Select the check box next to one or more devices and click this to submit the backup schedule.
Cancel	Click this to close this screen without applying any changes.

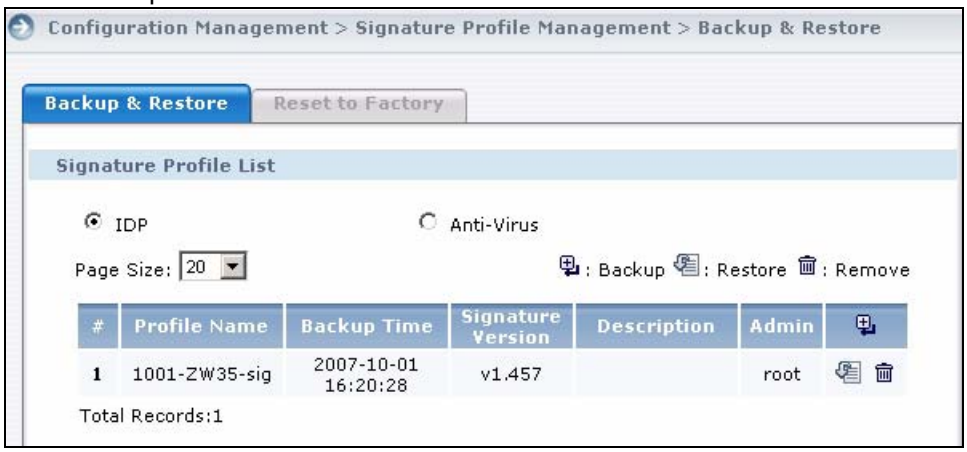
9.5 Signature Profile Management

Use this menu item to manage, back up and restore the configuration and signatures for services such as IDP and anti-virus. You can also use this menu item to reset the service configuration to its factory default settings. The menu item displays different screens depending on whether you selected a device or a folder before you clicked this menu item.

9.5.1 Backup & Restore

Use this screen to manage sets of anti-virus or IDP configurations and signatures uploaded to Vantage CNM for the selected device. To open this screen, select the device, click **Device Operation** in the menu bar and then click **Configuration Management** > **Signature Profile Management** > **Backup & Restore** in the navigation panel.

Figure 113 Device Operation > Configuration Management > Signature Profile Management > Backup & Restore


Configuration Management > Signature Profile Management > Backup & Restore
Backup & Restore
Reset to Factory
Signature Profile List
IDP
Anti-Virus
Page Size: 20
: Backup : Restore : Remove
Profile Name Backup Time Signature Version Description Admin
1 1001-ZW35-sig 2007-10-01 16:20:28 v1.457 root
Total Records:1

The following table describes the fields in this screen.

Table 102 Device Operation > Configuration Management > Signature Profile Management > Backup & Restore

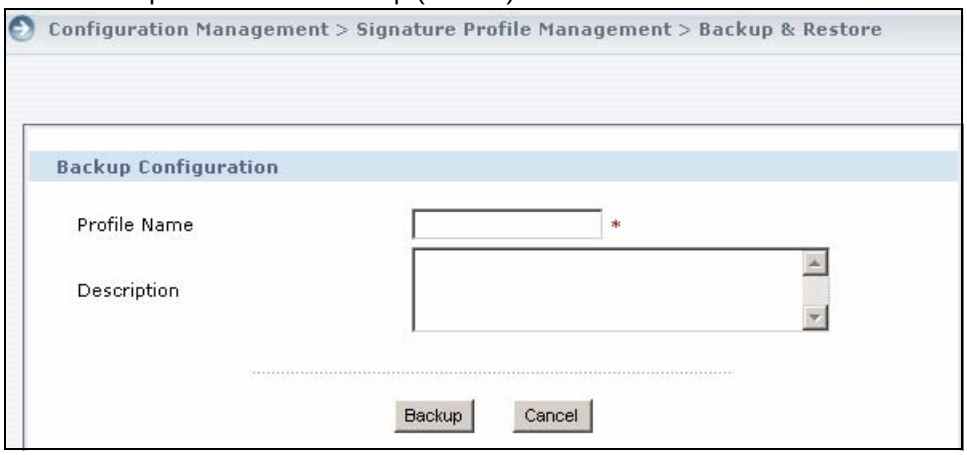
TYPE	DESCRIPTION
IDP/Anti-Virus	Select the service whose configuration and signatures you want to manage.
Page Size	Select this from the list box to set up how many records you want to see in each page.
#	This is the number of an individual entry.
Profile Name	This displays the name associated with the signature profile.
Backup Time	This field displays the time of backup.
Signature Version	This field displays the version of signature.
Description	This displays a description that was entered at the time of backup.
Admin	This field displays the administrator who performed the backup.
Backup	Click this to display a screen where you can perform a signature backup. Note: This icon is available only when you select a device.
Restore	Click this to restore a signature profile to the device.
Remove	Click this to remove the selected profile from the Vantage CNM server.
Total Records	This entry displays the total number of records on the current page of the list.

9.5.2 Signature Profile Backup (Device)

Use this screen to back up the anti-virus or IDP configuration and signatures for a specific device. The configuration may be stored in the Vantage CNM server or on the computer from which you access Vantage CNM. To open this screen, click **Backup** in the **Device Operation** > **Configuration Management** > **Signature Profile Management** > **Backup & Restore** screen.

You cannot use this screen if the device's Turbo Card is not installed.

Figure 114 Device Operation > Configuration Management > Signature Profile Management > Backup & Restore > Backup (Device)



The following table describes the fields in this screen

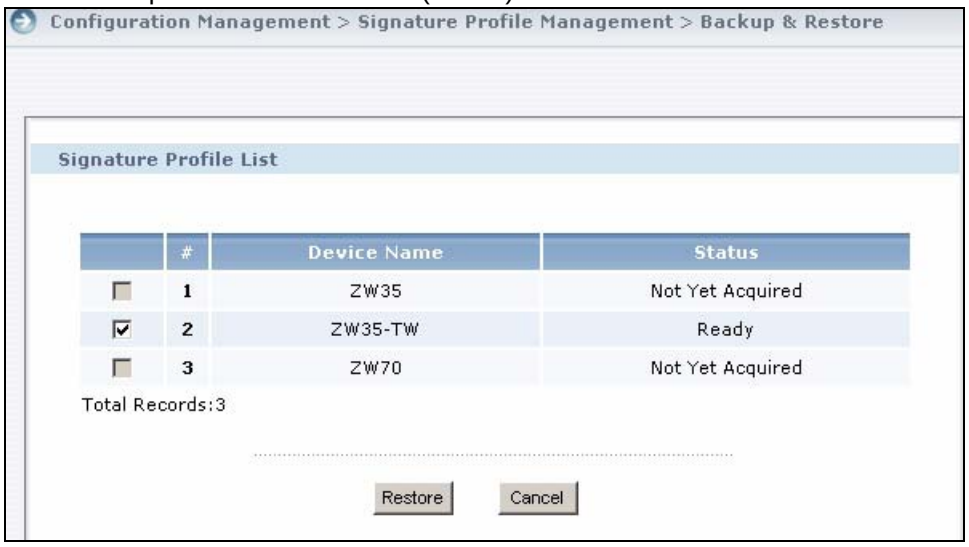
Table 103 Device Operation > Configuration Management > Signature Profile > Management (Device)

TYPE	DESCRIPTION
Profile Name	This displays the name associated with the configuration file and signatures.
Description	This displays a description that was entered at the time of backup.
Backup	Click this to back up the signatures for the device and save it as the configured profile name.
Cancel	Click this to return to the previous screen without applying any changes.

9.5.3 Signature Profile Restore (Folder)

Use this screen to restore a set of configuration files and signatures uploaded to Vantage CNM to one or more devices in the selected folder. You can track the status and look at the results of this operation in the Operation Report. See Section 18.6 on page 289. To open this screen, select an existing profile click **Restore** in the **Device Operation** > **Configuration Management > Signature Profile Management > Backup & Restore** screen.

Figure 115 Device Operation > Configuration Management > Signature Profile Management > Backup & Restore > Restore (Folder)



The following table describes the fields in this screen

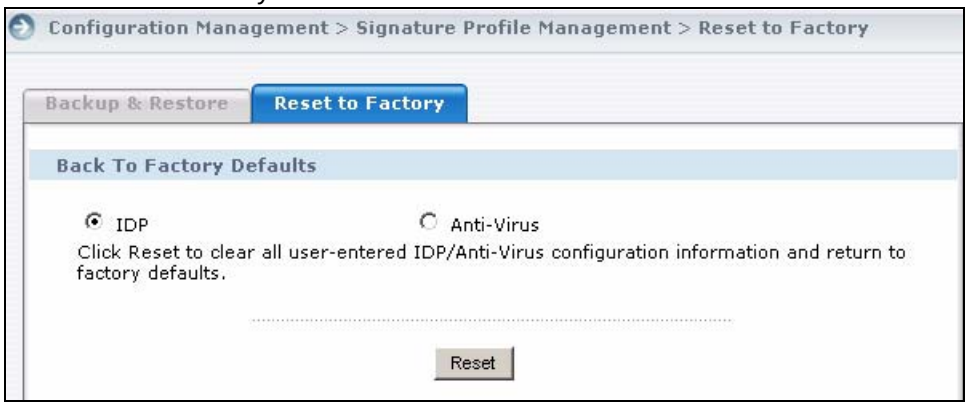
Table 104 Device Operation > Configuration Management > Signature Profile Management > Backup & Restore > Restore (Folder)

TYPE	DESCRIPTION
#	This is the number of an individual entry.
Device Name	This field displays the name of each device that is on in the folder.
Status	This displays the current status of the device. You can only restore the configuration file of a device that is **Ready**.
Total Records	This entry displays the total number of records on the current page of the device list.
Restore	Select the check box next to one or more devices and click this to restore the specified configuration file and signatures to them.
Cancel	Click this to return to the previous screen without applying any changes.

9.5.4 Reset to Factory

Use this screen to restore anti-virus or IDP configuration to factory default to a device. You can track the status and look at the results of this operation in the Operation Report. See Section 18.6 on page 289. To open this screen, select the device, click **Device Operation** in the menu bar and then click **Configuration Management** > **Signature Profile Management** > **Reset to Factory** in the navigation panel.

Figure 116 Device Operation > Configuration Management > Signature Profile Management > Reset to Factory


Configuration Management > Signature Profile Management > Reset to Factory
Backup & Restore
Reset to Factory
Back To Factory Defaults
IDP
Anti-Virus
Click Reset to clear all user-entered IDP/Anti-Virus configuration information and return to factory defaults.
Reset

The following table describes the fields in this screen

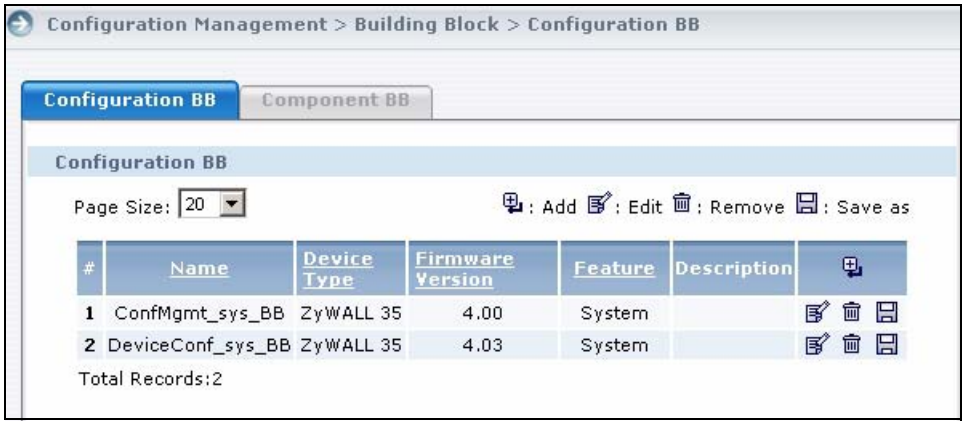
Table 105 Device Operation > Configuration Management > Signature Profile Management > Reset to Factory

TYPE	DESCRIPTION
IDP/Anti-Virus	Select the service whose configuration you want to manage.
Reset	Click this to reset the selected service configuration to factory default.

9.6 Configuration Building Block

Use this menu item to manage building blocks to the selected device. See Chapter 34 on page 356 for more information about building blocks. To open this menu item, select the device, click the **Device Operation** in the menu bar and then click **Configuration Management** > **Building Block** > **Configuration BB** in the navigation panel.

Figure 117 Device Operation > Configuration Management > Building Block > Configuration BB


Configuration Management > Building Block > Configuration BB
Configuration BB
Component BB
Configuration BB
Page Size: 20
: Add : Edit : Remove : Save as
Name Device Type Firmware Version Feature Description
1 ConfMgmt_sys_BB ZyWALL 35 4.00 System
2 DeviceConf_sys_BB ZyWALL 35 4.03 System
Total Records:2

The following table describes the fields in this screen

Table 106 Device Operation > Configuration Management > Building Block > Configuration BB

TYPE	DESCRIPTION
Page Size	Select this from the list box to set up how many records you want to see in each page.
#	This is the number of an individual entry.
Name	This displays the name of the configuration BB.
Device Type	This displays the type of the device that the building block was associated to and entered when it is created.
Firmware Version	This displays the firmware version of the device that the building block was associated to and entered when the BB is created.
Feature	This displays the associated features of the BB.
Description	This displays a description that was entered at the time the BB is created.
Add	Click this to display a screen where you can add a configuration BB.
Edit	Click this to modify an existing configuration BB.
Remove	Click this to remove a configuration BB.
Save as	Click this to copy a configuration BB to another one.
Total Records	This entry displays the total number of records on the current page of the list.

9.7 Add/Edit a Configuration BB

Use this menu item to manage building blocks to the selected device. See Chapter 34 on page 356 for more information about building blocks. To open this menu item, click **Add**, **Edit** or **Save as** in the **Device Operation** > **Configuration Management** > **Building Block** > **Configuration BB** screen.

Figure 118 Device Operation > Configuration Management > Building Block > Configuration BB > Add

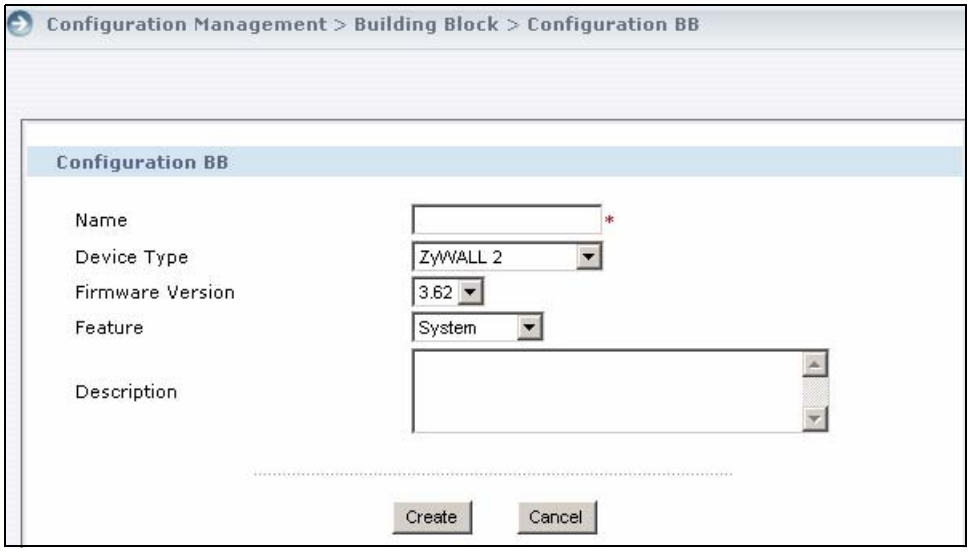


Figure 119 Device Operation > Configuration Management > Building Block > Configuration BB > Edit

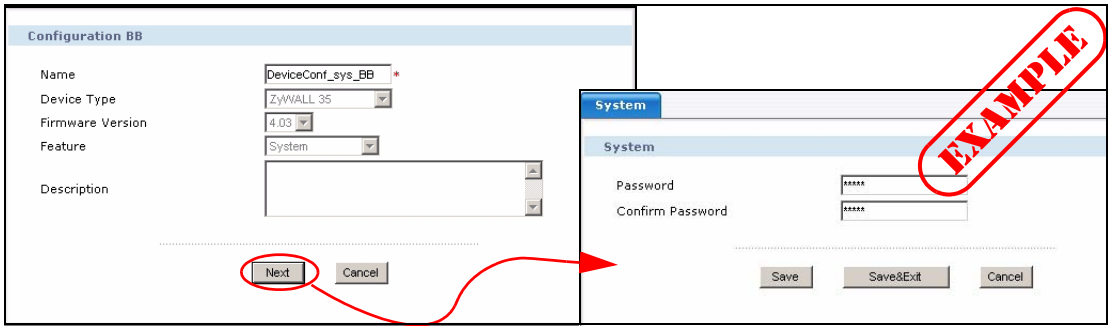
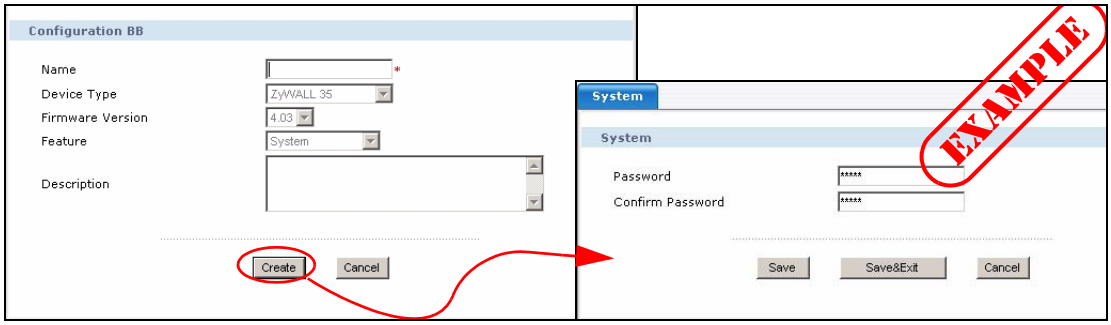


Figure 120 Device Operation > Configuration Management > Building Block > Configuration BB > Save as



The following table describes the fields in this screen

Table 107 Device Operation > Configuration Management > Building Block > Configuration BB > Add/Edit/Save as

TYPE	DESCRIPTION
Name	Enter a unique name for the building block. The name must be 1-32 alphanumeric characters, dashes (-) or underscores (_). It cannot include spaces. The name is case-sensitive.
Device Type	Select the type of device the building block is for.
Firmware Version	Select the firmware version the building block is for.

Table 107 Device Operation > Configuration Management > Building Block > Configuration BB > Add/Edit/Save as (continued)

TYPE	DESCRIPTION
Feature	Select the menu item the building block is for. If you select **System**, a screen displays (as **Device Operation** > **Device Configuration** > **General** > **System**) after you click **Create**. See Section 4.0.1 on page 55. If you select **Time Setting**, a screen displays (as **Device Operation** > **Device Configuration** > **General** > **Time Setting**) after you click **Create**. See Section 4.0.2 on page 56. If you select **Device Log**, a screen displays (as **Device Operation** > **Device Configuration** > **Device Log**) after you click **Create**. See Section 8.1 on page 209. If you select **Firewall**, a screen displays (as **Device Operation** > **Device Configuration** > **Security** > **Firewall**) after you click **Create**. See Section 6.1 on page 109. If you select **Anit-Spam**, a screen displays (as **Device Operation** > **Device Configuration** > **Security** > **Anti-Spam**) after you click **Create**. See Section 6.5 on page 142. If you select **Anti-Virus**, a screen displays (as **Device Operation** > **Device Configuration** > **Security** > **Anti-Virus**) after you click **Create**. See Section 6.4 on page 140. If you select **IDP**, a screen displays (as **Device Operation** > **Device Configuration** > **Security** > **IDP**) after you click **Create**. See Section 6.7 on page 151. If you select **Signature Update**, a screen displays (as **Device Operation** > **Device Configuration** > **Security** > **Signature Update**) after you click **Create**. See Section 6.10 on page 159. If you select **Content Filter**, a screen displays (as **Device Operation** > **Device Configuration** > **Security** > **Content Filter**) after you click **Create**. See Section 6.11 on page 161. If you select **Remote MGMT**, a screen displays (as **Device Operation** > **Device Configuration** > **Advanced** > **Remote Management**) after you click **Create**. See Section 7.13 on page 204. If you select **VPN**, a screen displays (as **Device Operation** > **Device Configuration** > **Security** > **VPN**) after you click **Create**. See Section 6.2 on page 120.
Description	Enter a description of the building block. You can enter up to 256 printable ASCII characters and spaces.
Create	This is available when you add or copy a configuration BB using save as. Click this to create the building block, if necessary, and edit the detailed configuration for the selected device type, firmware version, and menu item. Click this also displaying a screen you can continue the BB setting depending on the feature you selected.
Next	This is available when you edit a configuration BB. Click this to display a screen where you can continue the BB setting depending on the feature you selected.
Cancel	Click this to return to the previous screen without applying any changes.

9.8 Component BB

Use this menu item to manage component building blocks to the selected device. A component BB is a part of setting such as a myZyXEL.com account, an IP address, an IKE phase 1 or phase2 setting. See Chapter 34 on page 356 for more information about building blocks. To open this menu item, select the device, click **Device Operation** in the menu bar and then click **Configuration Management** > **Building Block** > **Component BB** in the navigation panel.

Figure 121 Device Operation > Configuration Management > Building Block > Component BB

Configuration Management > Building Block > Component BB
Configuration BB
Component BB
Component BB
Page Size: 20
: Add : Edit : Remove : Save as
Name Type Description
1 ComponentBB myZyXEL.com Account
Total Records:1

The following table describes the fields in this screen

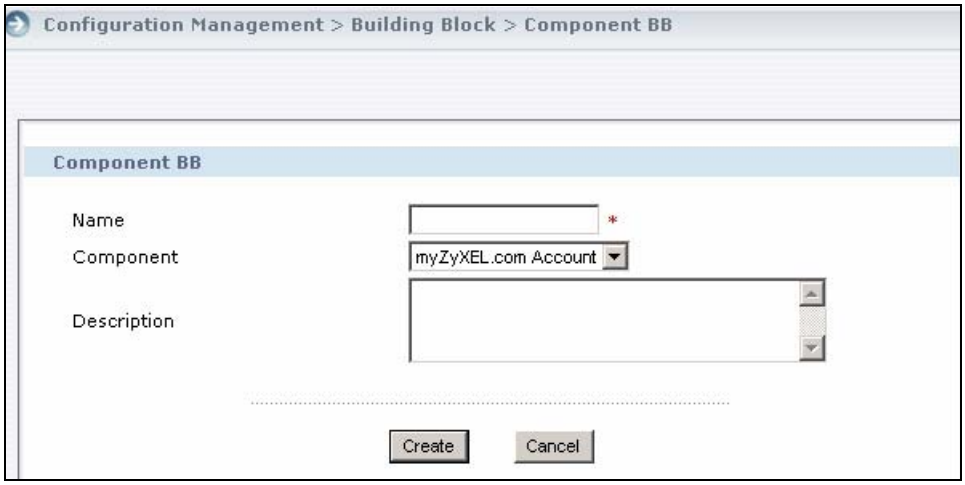
Table 108 Device Operation > Configuration Management > Building Block > Component BB

TYPE	DESCRIPTION
Page Size	Select this from the list box to set up how many records you want to see in each page.
#	This is the number of an individual entry.
Name	This displays the name of the BB.
Type	This displays the type of the BB selected when it was created.
Description	This displays a description that was entered at the time the BB is created.
Add	Click this to display a screen where you can add a BB.
Edit	Click this to modify an existing BB.
Remove	Click this to remove a BB.
Save as	Click this to copy a BB to another one.
Total Records	This entry displays the total number of records on the current page of the list.

9.9 Add/Edit/Save as a Component BB

Use this menu item to add, edit, or copy a building block to the selected device. To open this menu item, click **Add**, **Edit**, or **Save as** in the **Device Operation** > **Configuration Management** > **Building Block** > **Component BB** screen.

Figure 122 Device Operation > Configuration Management > Building Block > Component BB > Add/Edit/Save as



The following table describes the fields in this screen

Table 109 Device Operation > Configuration Management > Building Block > Component BB > Add/Edit/Save as

TYPE	DESCRIPTION
Name	Enter a unique name for the building block. The name must be 1-32 alphanumeric characters or underscores (_). It cannot include spaces. The name is case-sensitive.
Component	Select the type of device the building block is for.
Description	Enter a description of the building block. You can enter up to 256 printable ASCII characters and spaces.
Create	Click this to create the building block.
Cancel	Click this to return to the previous screen without applying any changes.

10

Firmware Management

10.1 Firmware List

Use this screen to upload device firmware to Vantage CNM. It is recommended administrators subscribe to a ZyXEL mailing list to be regularly informed of new firmware versions.

All firmware files are downloaded to one repository within Vantage CNM. All firmware files are available to every administrator, regardless of domain.

After you upload a firmware file to Vantage CNM, you can use the **Device Operation** > **Firmware Management** > **Firmware List** menu item to upload it from Vantage CNM to one or more devices. See Section 10.3 on page 237.

Click **Device Operation** in the menu bar and then click **Firmware Management** > **Firmware List** to display the next screen.

Figure 123 Device Operation > Firmware Management > Firmware List

Firmware Management > Firmware List > Firmware List
Firmware List
Firmware List
Page Size: 20
: Add : Remove
FW Alias Device Type FW Version FW Release Time
1 1050-v2-b2 ZyWALL 1050 2.00(XL.1)b2 09/14/2007
Total Records:1

The following table describes the fields in this screen.

Table 110 Device Operation > Firmware Management > Firmware List

TYPE	DESCRIPTION
Page Size	Select this from the list box to set up to how many records you want to see in each page.
#	This is the number of an individual entry.
FW Alias	This is a descriptive name for the firmware. This is specified when the firmware is uploaded. See Section 10.1.1 on page 236.
Device Type	This field displays the model. You must upload firmware to the correct model. Vantage CNM should automatically detect firmware for the device selected. Uploading incorrect firmware may damage the device.
FW Version	This field displays ZyXEL device firmware version.
FW Release Time	This field displays the date the firmware was created.
Add	Click **Add** to proceed to the next screen.

Table 110 Device Operation > Firmware Management > Firmware List (continued)

TYPE	DESCRIPTION
Remove	Click to delete a selected firmware from your Vantage CNM firmware management.
Total Records	This entry displays the total number of records on the current page of the list.

10.1.1 Add Firmware

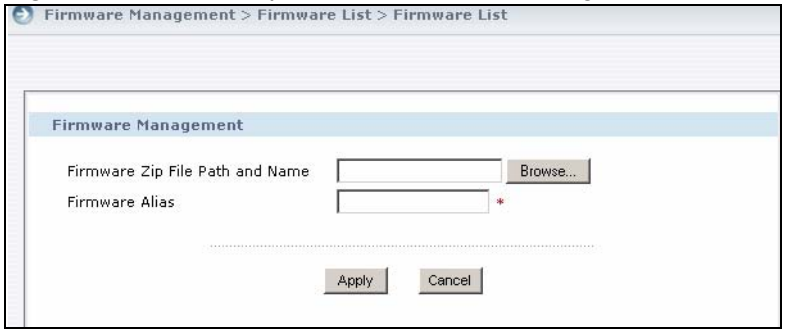
Use this screen to select the firmware you want to upload to Vantage CNM. To open this screen, click **Add** in the **Device Operation > Firmware Management > Firmware List** screen.

You must upload the whole firmware zip file, which contains the following:

- The device firmware (bin file extension). Only this firmware file is actually downloaded to the device.
- The device default configuration file (config file extension).
- Device firmware release notes (doc file extension) highlighting.
- Boot module with bm file extension.
- A file with XML file extension. Vantage CNM uses the XML file to gather the device type, firmware version and release date information.

Besides, you have to make sure the FTP information has been configurated properly in the **CNM System Setting** > **Configuration** > **Servers** > **Configuration. See** Section 21.1 on page 299.

Figure 124 Device Operation > Firmware Management > Firmware List > Add



Type the file name and path of the firmware zip file, or click **Browse** to locate it. You may also create an alias that appears in the previous screen. Click **Apply** to load the firmware zip file to Vantage CNM. Then, click **Device Operation > Firmware Management > Firmware Upgrade** if you want to upload the firmware to one or more devices. See Section 10.3 on page 237.

10.2 Scheduler List

Use this screen to look at and maintain the list of scheduled firmware upgrades in Vantage CNM. Once an upgrade is completed, Vantage CNM removes the upgrade record from this screen and adds it to the **Log & Report** > **Operation Report** > **Firmware Upgrade Report**. See Section 18.1 on page 279. To open this screen, click a folder or a device, click **Device Operation** in the menu bar and then click **Firmware Management** > **Scheduler List**.

Figure 125 Device Operation > Firmware Management > Scheduler List

Firmware Management > Schedule List > Schedule List
Schedule List
Schedule List
: Remove
FW Alias Upgrade Time Device Type Description Admin
1 403WZ0b4 2007-10-30 17:00:00 ZyWALL 35 test root
Total Records:1

The following table describes the fields in this screen.

Table 111 Device Operation > Firmware Management > Scheduler List

TYPE	DESCRIPTION
Page Size	Select this from the list box to set up to how many records you want to see in each page.
#	This is the number of an individual entry.
FW Alias	This is a descriptive name for the firmware. This is specified when the firmware is uploaded. See Section 10.1.1 on page 236.
Upgrade Time	This field displays the time the upgrade is scheduled to occur.
Device Type	This field displays the type of device that is going to be upgraded.
Total Devices	This is available when you click a folder. This field displays the number of devices that are going to be upgraded.
Description	This field displays any additional information the administrator provided when setting up this upgrade.
Admin	This field displays the administrator who scheduled this upgrade.
Add	This is available if you click a folder. Click this to set up a firmware upgrade. Vantage CNM returns to the screen in Figure 126 on page 238.
Edit	This is available if you click a folder. Click this to modify a schedule.
Delete	Click to cancel or delete the selected upgrade(s) from Vantage CNM.

10.3 Firmware Upgrade

Use this menu item to upload ZyXEL device firmware from Vantage CNM to one or more devices. You have to use the **Device Operation** > **Firmware Management** > **Firmware List** menu item to upload firmware files from the ZyXEL FTP site (or other source) to Vantage CNM first. See Section 10.1 on page 235.

Consider the following when you decide to upgrade firmware.

- It is advisable to upgrade firmware during periods of low network activity, since each device must restart after firmware upload.
- You should also notify device owners before you begin the upload. See the **CNM System Setting** > **Configuration** > **Notification** screen.

10.3.1 Folder

Use this screen to select what type of devices to which you want to upgrade firmware. To open this screen, select a folder in the device window, click **Device Operation** in the menu bar, and click **Firmware Management** > **Firmware Upgrade**.

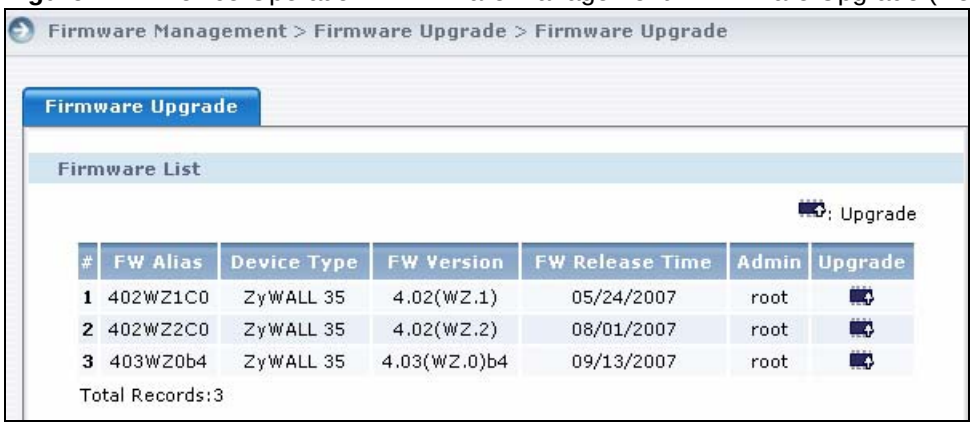
Figure 126 Device Operation > Firmware Management > Firmware Upgrade (Folder)

Pick a model name, and click **Next**. This opens a screen like the one in Section 10.3.2 on page 238.

10.3.2 Device

Use this screen to upgrade a firmware to the selected device. To open this screen, select a device in the device window, click **Device Operation** in the menu bar, and then click **Firmware Management** > **Firmware Upgrade**.

Figure 127 Device Operation > Firmware Management > Firmware Upgrade (Device)


Firmware Management > Firmware Upgrade > Firmware Upgrade
Firmware Upgrade
Firmware List
: Upgrade
FW Alias Device Type FW Version FW Release Time Admin Upgrade
1 402WZ1C0 ZyWALL 35 4.02(WZ.1) 05/24/2007 root
2 402WZ2C0 ZyWALL 35 4.02(WZ.2) 08/01/2007 root
3 403WZ0b4 ZyWALL 35 4.03(WZ.0)b4 09/13/2007 root
Total Records:3

The following table describes the fields in this screen.

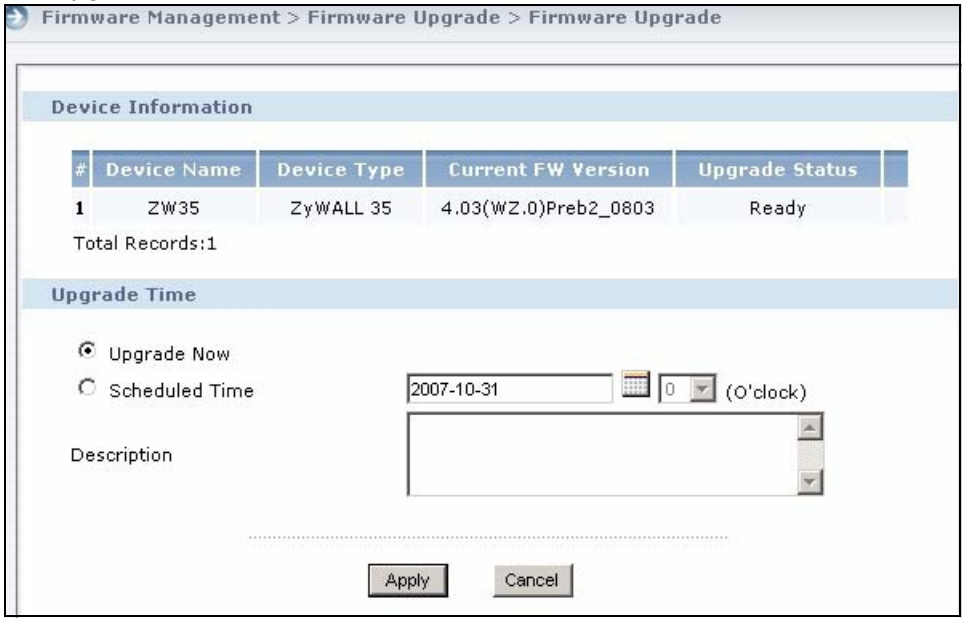
Table 112 Device Operation > Firmware Management > Firmware Upgrade (Device)

TYPE	DESCRIPTION
#	This field displays the device number.
FW Alias	This is a descriptive name for the firmware. This is specified when the firmware is uploaded. See Section 10.1.1 on page 236.
Device Type	This field displays the model. You must upload firmware to the correct model. Vantage CNM should automatically detect firmware for the device selected. Uploading incorrect firmware may damage the device.
FW Version	This field displays ZyXEL device firmware version. It is blank if the device has not been registered.
FW Release Time	This field displays the date the firmware was created.
Admin	This field displays the administrator who downloaded this firmware file to Vantage CNM.
Upgrade	Click **Upgrade** to take you to a screen where you can upgrade the selected firmware to the device.
Total Records	This entry displays the total number of records on the current page of the list.
Back	Click **Back** to return to the previous screen.

10.3.3 Device > Upgrade

Use this screen to perform the firmware upgrade to the selected device right away or define a schedule for it. To open this screen, click **Upgrade** on a firmware entry in the **Device Operation** > **Firmware Management** > **Firmware Upgrade** screen (Refer to Figure 127 on page 238).

Figure 128 Device Operation > Firmware Management > Firmware Upgrade (Device) > Upgrade



The following table describes the fields in this screen.

Table 113 Device Operation > Firmware Management > Firmware Upgrade (Device) > Upgrade

TYPE	DESCRIPTION
Device Information	This section displays the selected device(s) to which you will perform the firmware upgrade(s).
#	This is the number of an individual entry.
Device Name	This field displays the selected device name(s).
Device Type	This field displays the model. You must upload firmware to the correct model. Vantage CNM should automatically detect firmware for the device selected. Uploading incorrect firmware may damage the device.
Current FW Version	This field displays the firmware version the ZyXEL device is using. It is blank if the device has not been registered.
Upgrade Status	This field displays the device's current status. **Ready** means the device is ok to perform the firmware upgrade. **Offline** means the device is not currently connected to the Vantage CNM. **Not Yet Required** means the device has not connected to the Vantage CNM since it was added in the Vantage CNM. **Rom File Operating** means the device is busy for a configuration backup or restore. **Scheduled** means the device has been scheduled for a firmware upgrade. **Upgrading** means the device is processing a firmware upgrade. You can perform the device firmware upgrade only when the status is **Ready**.
Total Records	This entry displays the total number of records on the current page of the list.
Upgrade Time	
Upgrade Now	Select this if you want to perform the firmware upgrade right away.
Schedule Time	Select this radio box to define a time Vantage CNM server automatically perform upgrade for the device(s). Select the calendar to specify a date for the upgrade schedule. Select a time from **O'clock** to specify a time for the upgrade schedule. After clicking **Apply**, you can see the scheduled firmware upgrade status in the **Device Operation > Firmware Management > Schedule List** before the upgrade is completed.
Description	Type the note for this firmware upgrade.
Apply	Click this to upload the firmware file for the device.
Cancel	Click **Cancel** to close this screen without applying any changes.

11

License Management

11.1 Service Activiation

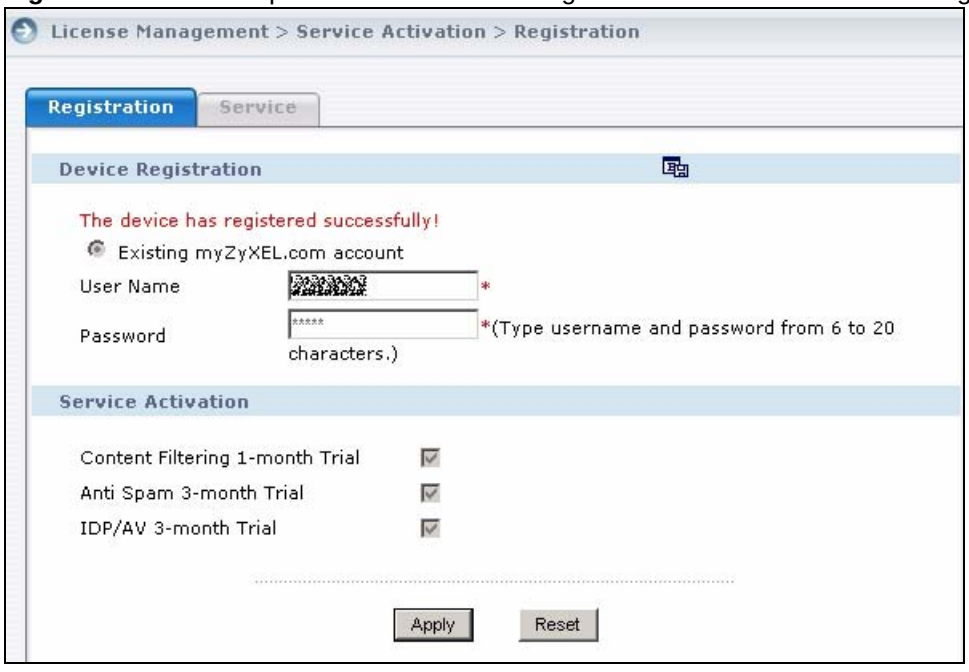
Use this menu item to register the selected device and to activate subscription services.

This menu item is available if you click a device.

11.1.1 Registration

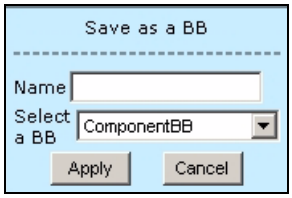
Use this screen to register the selected device on www.myzyxel.com and to activate free trials for subscription services, such as IDP and content filtering. The Vantage CNM server must be connected to the Internet and have access to www.myzyxel.com. To open this screen, click **Device Operation** in the menu bar and then click **License Management** > **Service Activation** > **Registration** in the navigation panel.

Figure 129 Device Operation > License Management > Service Activation > Registration



Click the **Save as a BB** icon to save the current configuration of the selected device as a building block. The following pop-up screen appears.

Figure 130 Device Operation > License Management > Service Activiation > Registration > Save as a BB



Enter the name of the new building block, and click **Apply**. The name must be 1-32 alphanumeric characters or underscores (_). It cannot include spaces. The name is case-sensitive.

The following table describes the labels in this screen.

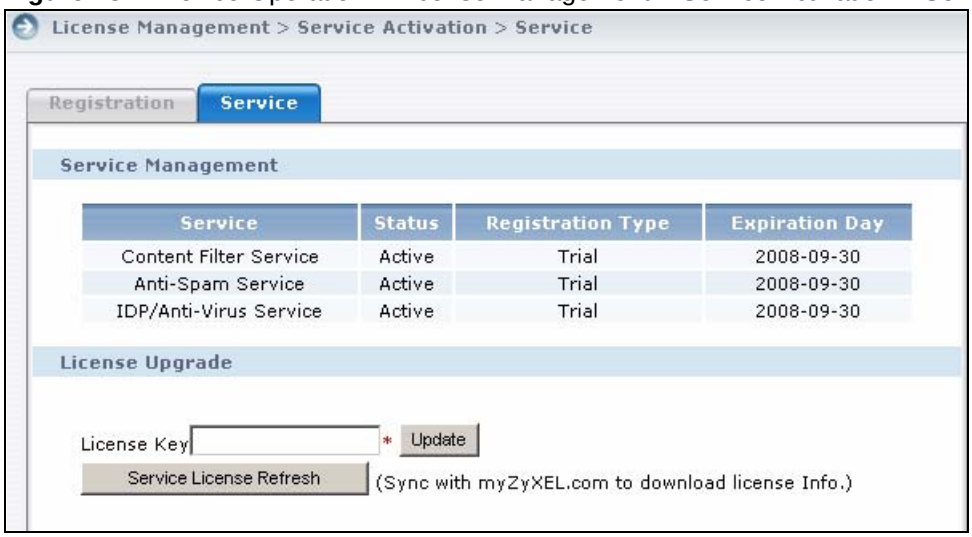
Table 114 Device Operation > License Management > Service Activation > Registration

LABEL	DESCRIPTION
Device Registration	If you select **Existing myZyXEL.com account**, only the **User Name** and **Password** fields are available. Click **Save as a BB** to save the current setting as a component building block.
New myZyXEL.com account	If you haven't created an account at myZyXEL.com, select this option and configure the following fields to create an account and register your device.
Existing myZyXEL.com account	If you already have an account at myZyXEL.com, select this option and enter your user name and password in the fields below to register your device.
User Name	Enter a user name for your myZyXEL.com account. The name should be from six to 20 alphanumeric characters (and the underscore). Spaces are not allowed.
Check	Click this button to check with the myZyXEL.com database to verify the user name you entered has not been used.
Password	Enter a password of between six and 20 alphanumeric characters (and the underscore). Spaces are not allowed.
Confirm Password	Enter the password again for confirmation.
E-Mail Address	Enter your e-mail address. You can use up to 80 alphanumeric characters (periods and the underscore are also allowed) without spaces.
Country	Select your country from the drop-down box list.
Service Activation	These are trial service subscriptions. After the trial expires, you can buy an iCard and enter the license key in the **Device Operation > License Management > Service Activation > Service** screen to extend the service.
Content Filtering 1-month Trial	Select the check box to activate a trial. The trial period starts the day you activate the trial.
Anti Spam 3-month Trial	Select the check box to activate a trial. The trial period starts the day you activate the trial.
IDP/AV 3-month Trial	Select the check box to activate a trial. The trial period starts the day you activate the trial.
Apply	Click **Apply** to save your changes.
Reset	Click **Reset** to begin configuring this screen afresh.

11.1.2 Service

Use this screen to look at or update the current status of subscription services, such as IDP and content filtering, in the selected device. The Vantage CNM server must be connected to the Internet and have access to www.myzyxel.com to update the current status. To open this screen, click a device, click **Device Operation** in the menu bar and then click **License Management** > **Service Activation** > **Service** in the navigation panel

Figure 131 Device Operation > License Management > Service Activation > Service



The following table describes the labels in this screen.

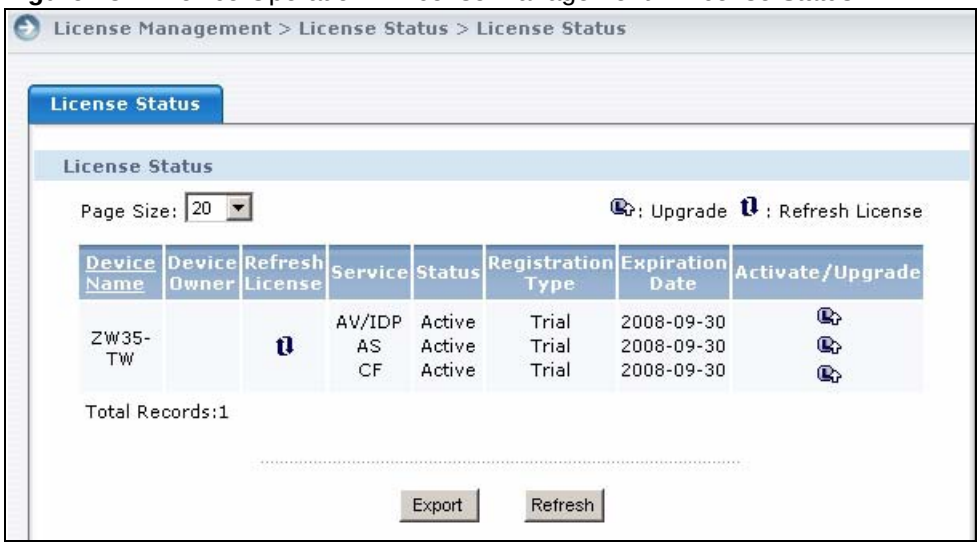
Table 115 Device Operation > License Management > Service Activation > Service

LABEL	DESCRIPTION
Service Management	
Service	This field displays the service name available on the device.
Status	This field displays whether a service is activated (**Active**) or not (**Inactive**).
Registration Type	This field displays whether you applied for a trial application (**Trial**) or registered a service with your iCard's PIN number (**Standard**).
Expiration Day	This field displays the date your service expires.
License Upgrade	
License Key	Enter your iCard's PIN number and click **Update** to activate or extend a standard service subscription. If a standard service subscription runs out, you need to buy a new iCard (specific to your device) and enter the new PIN number to extend the service.
Service License Refresh	Click this button to renew service license information, such as the license key, registration status and expiration day. You might do this if you restore the device to the default configuration file or upload a different configuration file after you register the device on www.myzyxel.com.

11.2 License Status

Use this screen to look at the current status of licenses for subscription services, such as IDP and content filtering. To open this screen, click a device, click **Device Operation** in the menu bar and then click **License Management** > **License Status** in the navigation panel.

Figure 132 Device Operation > License Management > License Status



The following table describes the labels in this screen.

Table 116 Device Operation > License Management > License Status

LABEL	DESCRIPTION
Page Size	Select this from the list box to set up to how many records you want to see in each page.
Device Name	This field displays the name (and location in Vantage CNM) of the device.
Device Owner	This field displays owner's name of the device.
Refresh License	Click this to update the license status of the selected service(s) for the device.
Service	This field displays the name of the selected service(s).
Status	This field displays the current status of the license for this service on this device. **Active**: The service is currently available on the device. **Inactive**: The service is not available (or has expired) on the device.
Registration Type	This field displays the type of license that is currently on the device. This is based on the last license that was set up on the device. For example, if you start with a trial version and upgrade to a standard license, this field shows the standard license.
Expiration Date	This field displays the date the subscription is scheduled to expire or already expired on the device.
Activate/Upgrade	Click **Activate** to activate a trial version of the service or to apply a license for the service to the device. Click **Upgrade** to apply a license for the service to the device.
Total Records	This entry displays the total number of records on the current page of the device list.
Export	Click this to export the license status to a DeviceLicense.csv file.
Resfresh	Click this to update the information in this screen.

11.2.1 Activate/Upgrade License

Use this screen to activate a trial version of the service, if available, or to apply a license for the service to the device. To open this screen, click **Upgrade** in the **Device Operation** > **License Management** > **License Status** screen.

Figure 133 Device Operation > License Management > License Status > Upgrade

The following table describes the labels in this screen.

Table 117 Device Operation > License Management > License Status > Activate/Upgrade

LABEL	DESCRIPTION
Active to Trial	This field is available if a trial version of the service is available for the device. Select this and click **Apply** to activate a trial version of the service for the device.
Upgrade	Select this if you want to apply a license for the service to the device.
License Key	Enter your iCard's PIN number. If a standard service subscription runs out, you need to buy a new iCard (specific to your device) and enter the new PIN number to extend the service.
Apply	Click this to activate the trial version or apply the specified license to the device.
Cancel	Click this to return to the previous screen without making any changes.

11.3 Signature Status

Use this screen to look at the current status of signatures for subscription services, such as IDP and anti-virus. To open this screen, click **Device Operation** in the menu bar and then click **License Management** > **Signature Status**.

Figure 134 Device Operation > License Management > Signature Status

The following table describes the labels in this screen.

Table 118 Device Operation > License Management > Signature Status

LABEL	DESCRIPTION
Page Size	Select this from the list box to set up to how many records you want to see in each page.
Device Name	This field displays the name of the device.
Service	This field displays the name of the selected service(s).
Current Pattern Version	This field displays the signatures version number currently used by the device. This number is defined by the ZyXEL Security Response Team (ZSRT) who maintains and updates them. This number increments as new signatures are added, so you should refer to this number regularly. Go to https://mysecurity.zyxel.com/mysecurity/jsp/download/download.jsp to see what the latest version number is. You can also subscribe to signature update e-mail notifications.
Release Date	This field displays the date (month, date, year) that the above signature set was created.
Last Update Date	This field displays the last date you downloaded new signatures to the device.
Expiration Date	This field displays the date the subscription is scheduled to expire. It displays **Inactive** if the service is not available on the device or has expired.
Update Now	Click this to begin downloading signatures immediately.
Total Records	This entry displays the total number of records on the current page of the device list.
Refresh	Click this to update the information in this screen.

PART III
VPN Management

The examples in this section use one of the most comprehensive examples of each screen, not every variation for each device type and firmware version. If you are unable to find a specific screen or field in this User's Guide, please see the User's Guide for the device for more information.

VPN Community (249)

Installation Report (255)

VPN Monitor (257)

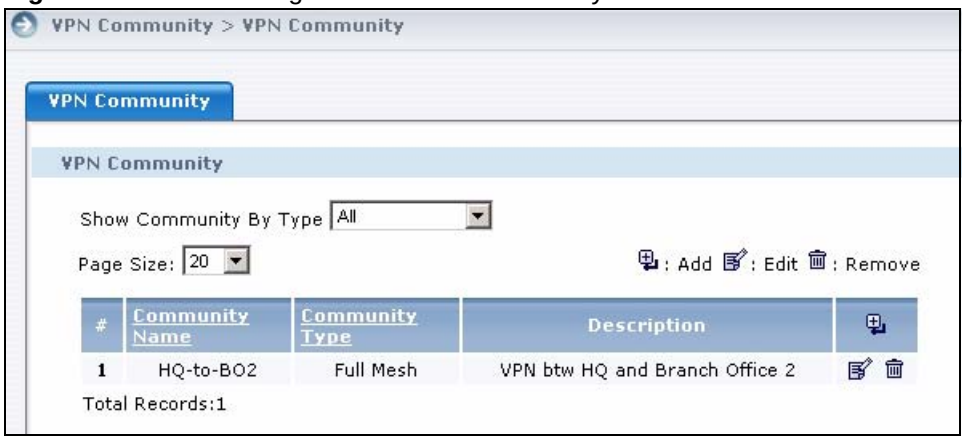
12

VPN Community

12.1 VPN Community

Use this menu item to manage VPN configuration between or among ZyXEL devices. To open this menu item, select the device, click **VPN Management** in the menu bar and then click **VPN Community** in the navigation panel.

Figure 135 VPN Management > VPN Community



The following table describes the fields in this screen.

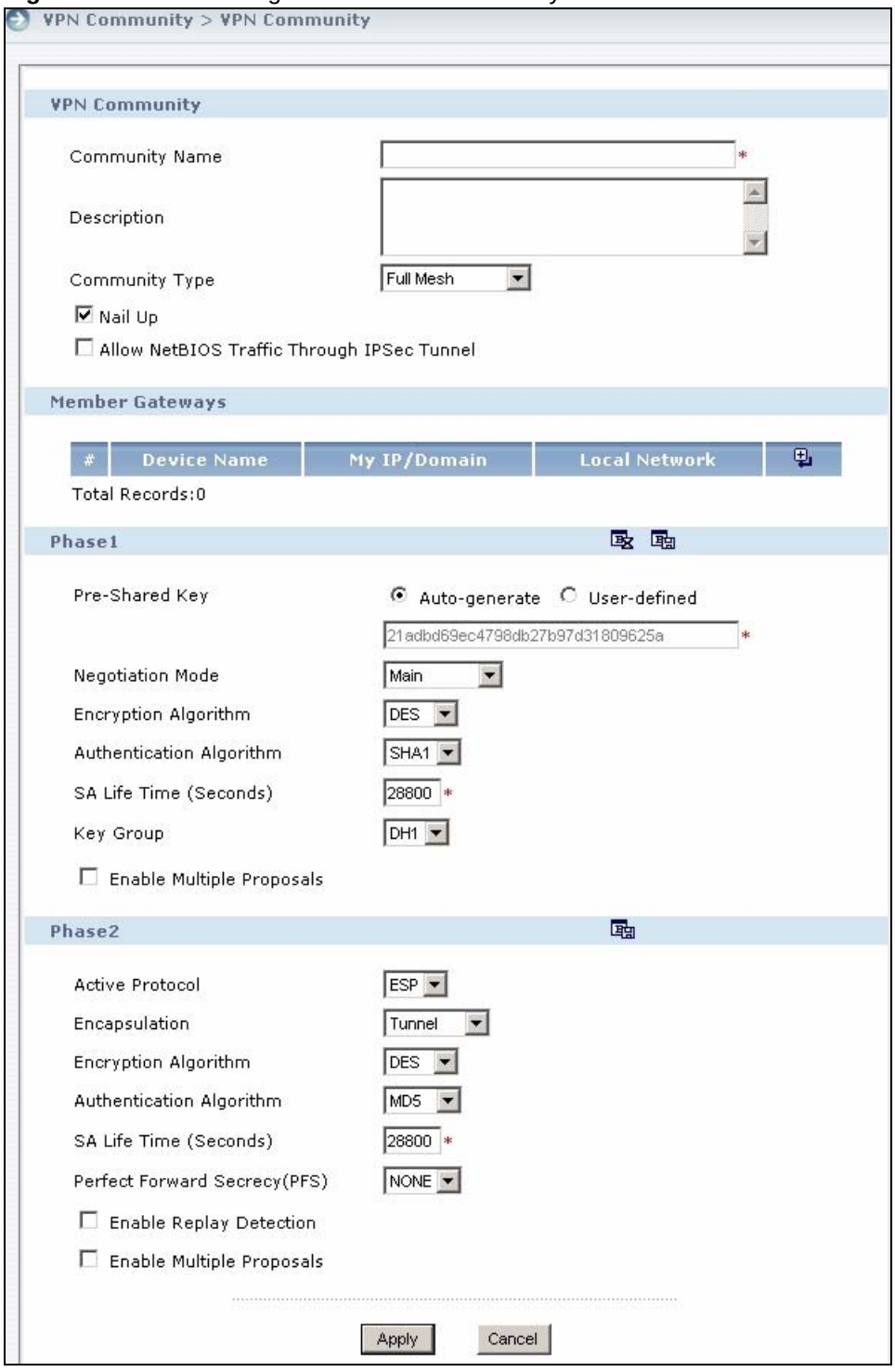
Table 119 VPN Management > VPN Community

FIELD	DESCRIPTION
Show Community By Type	Select this from the list box to display which VPN community type you want to see in this screen.
Page Size	Select this from the list box to set up to how many records you want to see in each page.
#	This is the number of an individual entry.
Community Name	This displays a name of the VPN community.
Community Type	This displays an VPN community type such as Full Mesh, Hub & Spoke, or Remote Access.
Description	This displays a description of the VPN community.
Add	Click this to display a screen where you can easily configure VPN settings among ZyXEL devices.
Edit	Click this to modify an existing VPN community setting.
Remove	Click this to delete a VPN community setting.
Total Records	This entry displays the total number of records on the current page of the list.

12.1.1 Add/Edit a VPN Community

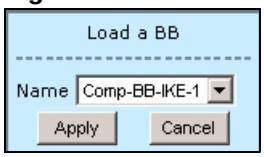
Use this scree to configure VPN configuration between or among ZyXEL devices. We know almost all VPN parameter values should be the same in peer VPN gateways. This screen helps you to easily configure VPN settings in one screen and applies it to devices in one time. To open this menu item, click **Add** or **Edit** in the **VPN Management** > **VPN Community** screen.

Figure 136 VPN Management > VPN Community > Add/Edit



Click the **Load a BB** icon to use phase 1 or phase 2 setting from an existing building block. The following pop-up screen appears.

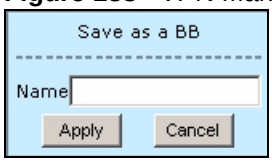
Figure 137 VPN Management > VPN Community > Add/Edit > Load a BB



Select a building block from the list box, and click **Apply**. Or click **Cancel** to close the screen without applying any setting.

Click the **Save as a BB** icon to save the current phase 1 or phase 2 setting as a building block. The following pop-up screen appears.

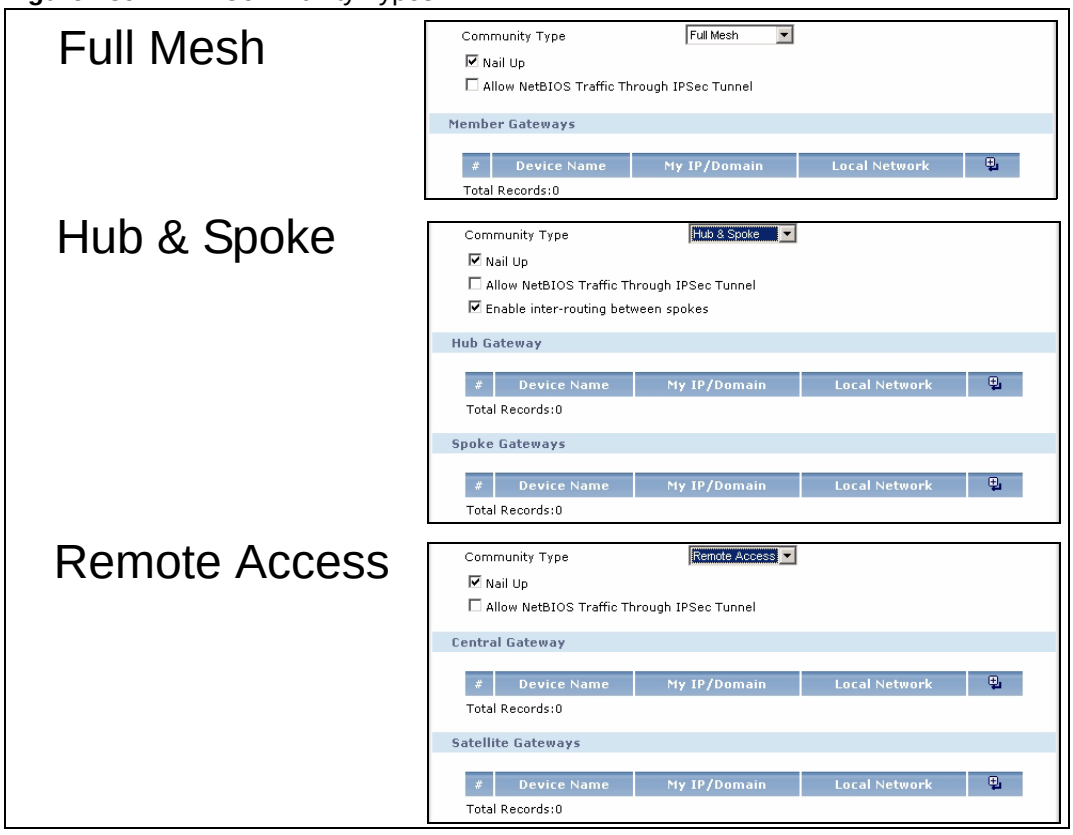
Figure 138 VPN Management > VPN Community > Add/Edit > Save as a BB



Enter the name of the new building block, and click **Apply**. The name must be 1-32 alphanumeric characters or underscores (_). It cannot include spaces. The name is case-sensitive.

Some fields display vary depends on the community type you selected as shown next.

Figure 139 VPN Community Types



The following table describes the fields in this screen.

Table 120 VPN Management > VPN Community > Add/Edit

FIELD	DESCRIPTION
VPN Community	
Community Name	Type a name to identify this VPN community.
Description	Type a descriptive note for the VPN community.
Community Type	Select a VPN community type such as **Full Mesh**, **Hub & Spoke**, or **Remote Access**.
Nail Up	Select this check box to turn on the nailed up feature for this VPN community.
Allow NetBIOS Traffic Through IPSec Tunnel	Select this check box to allow NetBIOS packets sent through the VPN connection.
Enable inter-routing between spokes	This option is available if you select the **Hub & Spoke** community type. Select this to allow routing among spoke devices.
Member Gateways	This is avaialble if you select the **Full Mesh**.community type. You have to select at least two device in this section.
Hub Gateway	This is avaialble if you select the **Hub & Spoke** community type. You have to select only one device in this section.
Spoke Gateways	This is avaialble if you select the **Hub & Spoke** community type. You have to select at least one device in this section.
Central Gateway	This is avaialble if you select the **Remote Access** community type. You have to select only one device in this section.
Satellite Gateways	This is avaialble if you select the **Remote Access** community type. You have to select at least one device in this section.
#	This is the number of an individual entry.
Device Name	This field displays the device name.
My IP/Domain	This field identifies the WAN IP address or domain name of the member gateway. Note: When you select **Remote Access** for the community type, make sure the central gateway's **MyIP** is a fixed IP address.
Local Network	This is the network behind the member gateway. A network policy specifies which devices (behind the IPSec routers) can use the VPN tunnel.
Add	Click this to open the screen where you can select VPN gateways in this community.
Edit	Click this to edit the selected VPN gateway in this community.
Total Records	This entry displays the total number of records on the current page of the list.
Phase 1	
Pre-Shared Key	Select **Auto-generate** the Vantage CNM generates a pre-shared key. Or select **User-defined** and type a key from 8 to 31 case-sensitive ASCII characters or from 16 to 62 hexadecimal ("0-9", "A-F") characters. You must precede a hexadecimal key with a "0x (zero x), which is not counted as part of the 16 to 62 character range for the key. For example, in "0x0123456789ABCDEF", 0x denotes that the key is hexadecimal and 0123456789ABCDEF is the key itself.
Negotiation Mode	Select **Main** or **Aggressive** from the drop-down list box.

Table 120 VPN Management > VPN Community > Add/Edit (continued)

FIELD	DESCRIPTION
Encryption Algorithm	Select which key size and encryption algorithm to use in the IKE SA. Choices are: DES - a 56-bit key with the DES encryption algorithm 3DES - a 168-bit key with the DES encryption algorithm AES - a 128-bit key with the AES encryption algorithm The ZyWALL and the remote IPSec router must use the same algorithms and keys. Longer keys require more processing power, resulting in increased latency and decreased throughput.
Authentication Algorithm	Select which hash algorithm to use to authenticate packet data in the IKE SA. Choices are **SHA1** and **MD5**. **SHA1** is generally considered stronger than **MD5**, but it is also slower.
SA Life Time (Seconds)	Define the length of time before an IKE SA automatically renegotiates in this field. It may range from 180 to 3,000,000 seconds (almost 35 days).
Key Group	Select which Diffie-Hellman key group (DH*x*) you want to use for encryption keys. Choices are: **DH1** - use a 768-bit random number **DH2** - use a 1024-bit random number
Enable Multiple Proposals	Select this to allow the ZyWALL to use any of its phase 1 key groups and encryption and authentication algorithms when negotiating an IKE SA. When you enable multiple proposals, the ZyWALL allows the remote IPSec router to select which phase 1 key groups and encryption and authentication algorithms to use for the IKE SA, even if they are less secure than the ones you configure for the VPN rule. Clear this to have the ZyWALL use only the configured phase 1 key groups and encryption and authentication algorithms when negotiating an IKE SA.
Phase 2	
Active Protocol	Select the security protocols used for an SA. Both **AH** and **ESP** increase processing requirements and communications latency (delay).
Encryption Algorithm	Select which key size and encryption algorithm to use in the IKE SA. Choices are: **DES** - a 56-bit key with the DES encryption algorithm **3DES** - a 168-bit key with the DES encryption algorithm **NULL** - no encryption key or algorithm **AES** - a 128-bit key with the AES encryption algorithm The ZyWALL and the remote IPSec router must use the same algorithms and keys. Longer keys require more processing power, resulting in increased latency and decreased throughput.
Authentication Algorithm	Select which hash algorithm to use to authenticate packet data in the IPSec SA. Choices are **SHA1** and **MD5**. **SHA1** is generally considered stronger than **MD5**, but it is also slower.
SA Life Time (Seconds)	Define the length of time before an IPSec SA automatically renegotiates in this field. The minimum value is 180 seconds. A short SA Life Time increases security by forcing the two VPN gateways to update the encryption and authentication keys. However, every time the VPN tunnel renegotiates, all users accessing remote resources are temporarily disconnected.

Table 120 VPN Management > VPN Community > Add/Edit (continued)

FIELD	DESCRIPTION
Perfect Forward Secret (PFS)	Select whether or not you want to enable Perfect Forward Secrecy (PFS) and, if you do, which Diffie-Hellman key group to use for encryption. Choices are: **NONE** - disable PFS **DH1** - enable PFS and use a 768-bit random number **DH2** - enable PFS and use a 1024-bit random number PFS changes the root key that is used to generate encryption keys for each IPSec SA. It is more secure but takes more time.
Enable Replay Detection	As a VPN setup is processing intensive, the system is vulnerable to Denial of Service (DOS) attacks. The IPSec receiver can detect and reject old or duplicate packets to protect against replay attacks. Enable replay detection by selecting this check box.
Enable Multiple Proposals	Select this to allow the ZyWALL to use any of its phase 2 encryption and authentication algorithms when negotiating an IPSec SA. When you enable multiple proposals, the ZyWALL allows the remote IPSec router to select which phase 2 encryption and authentication algorithms to use for the IPSec SA, even if they are less secure than the ones you configure for the VPN rule. Clear this to have the ZyWALL use only the configured phase 2 encryption and authentication algorithms when negotiating an IPSec SA.
Apply	Click **Apply** to save the changes.
Cancel	Click **Cancel** to discard all changes and return to the previous screen.

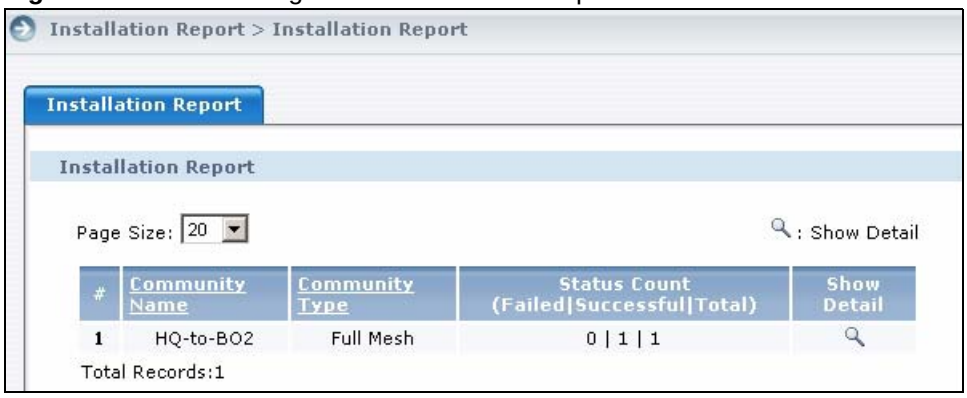
13

Installation Report

13.1 Installation Report

Use this screen to view the VPN community status between or among the devices. To open this screen, click a device or a folder, and then click **VPN Management** from the menu bar and then click **Installation Report** in the navigation panel.

Figure 140 VPN Management > Installation Report


Installation Report > Installation Report
Installation Report
Installation Report
Page Size: 20
: Show Detail
Community Name Community Type Status Count (Failed|Successful|Total) Show Detail
1 HQ-to-BO2 Full Mesh 0 | 1 | 1
Total Records:1

The following table describes the fields in this screen.

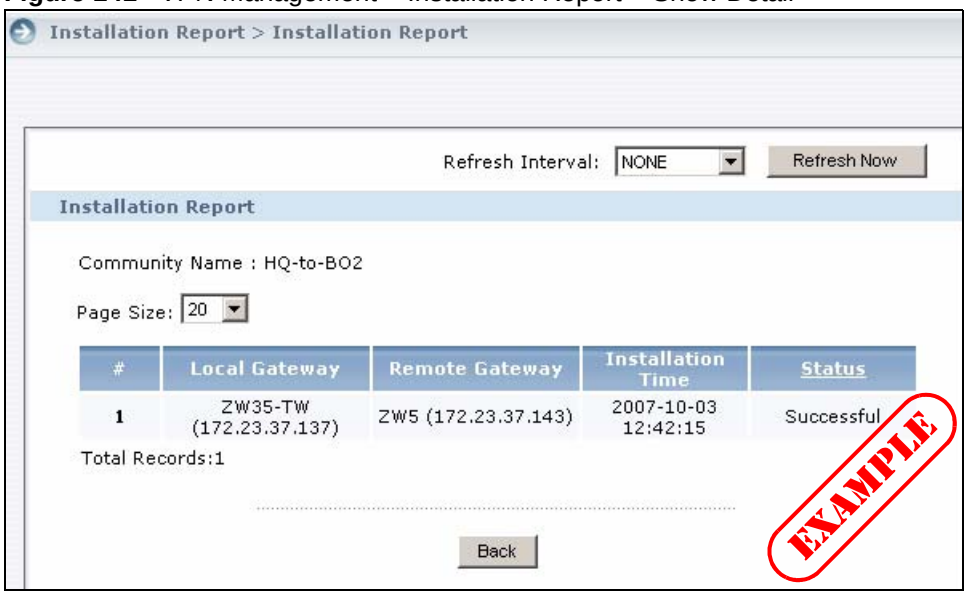
Table 121 VPN Management > Installation Report

FIELD	DESCRIPTION
Page Size	Select this from the list box to set up to how many records you want to see in each page.
#	This is the number of an individual entry.
Community Name	This displays a name of the VPN community.
Community Type	This displays an VPN community type such as Full Mesh, Hub & Spoke, or Remote Access.
Status Count (Failed|Successful|Total)	This displays how many tunnels in total are configured in this VPN community. And how many tunnels were failed and successfully established.
Show Detail	Click this to display a screen where you can view detailed VPN settings among the devices.
Total Records	This entry displays the total number of records on the current page of the list.

13.1.1 Show Detailed Installation Reportl

Use this screen to view whether the VPN communities have been applied successfully to all member gateways. To open this screen, click **Show Detail** in the **VPN Management** > **Installation Report** screen.

Figure 141 VPN Management > Installation Report > Show Detail



The following table describes the fields in this screen.

Table 122 VPN Management > Installation Report

FIELD	DESCRIPTION
Refresh Interval	Set how often the Vantage CNM should update the information in this screen. Click **Refresh Now** to update the information right away.
Community Name	This field displays the name of the VPN community.
Page Size	Select this from the list box to set up to how many records you want to see in each page.
#	This is the number of an individual entry.
Local Gateway	This displays the local VPN gateway name and IP address of this tunnel.
Remote Gateway	This displays the remote VPN gateway name and IP address of this tunnel.
Installation Time	This displays the date and time the VPN community is set to devices.
Status	This displays whether the VPN community has been successfully applied to all member gateways.
Total Records	This entry displays the total number of records on the current page of the list.
Back	Click this to return to the previous screen.

14

VPN Monitor

14.1 VPN Monitor

Use this menu item to centrally and easily monitor all VPN community status among devices. You can check from a communities list (by community) or from a devices list (by device).

14.2 By Community

Use this menu item to monitor all VPN community status. To open this screen, click a device or a folder, and then click **VPN Management** from the menu bar and click **VPN Monitor** > **By Community** in the navigation panel.

Figure 142 VPN Management > VPN Monitor > By Community

VPN Monitor > By Community > By Community
By Community
VPN Community Summary
Total : 1
Full Mesh : 1
Hub & Spoke : 0
Remote Access : 0
VPN Tunnel Status
Page Size: 20
: Show Detail
Community Name Community Type Up Tunnels Total Tunnels Show Detail
1 HQ-to-BO2 Full Mesh 1 1
Total Records:1

The following table describes the fields in this screen.

Table 123 VPN Management > VPN Monitor > By Community

LABEL	DESCRIPTION
VPN Community Summary	This section displays you how many VPN communities in total are available and how many tunnels in each community type such as Full Mesh, Hub & Spoke, Remote Access.
Page Size	Select this from the list box to set up to how many records you want to see in each page.

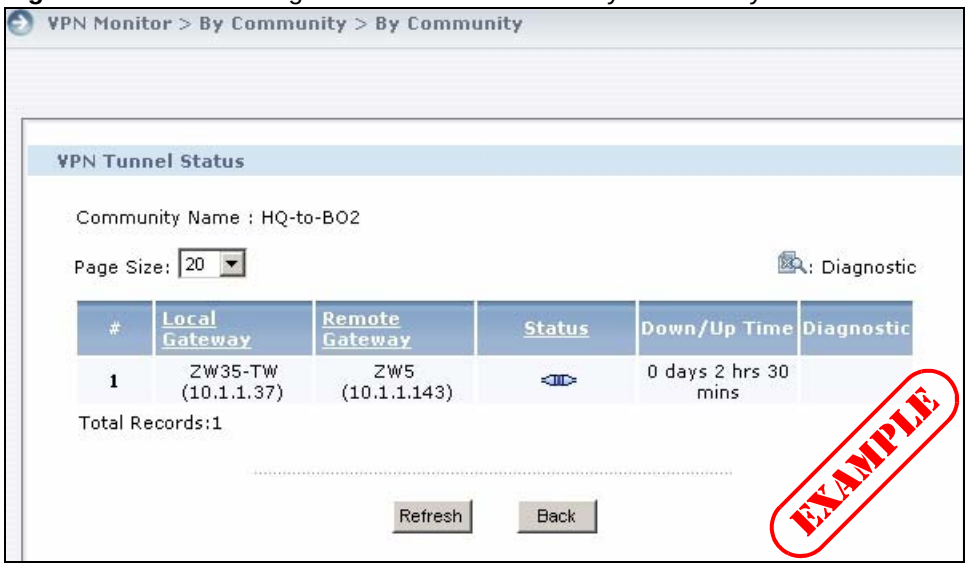
Table 123 VPN Management > VPN Monitor > By Community (continued)

LABEL	DESCRIPTION
#	This is the number of an individual entry.
Community Name	This displays a name of the VPN community.
Community Type	This displays an VPN community type such as Full Mesh, Hub & Spoke, or Remote Access.
Up Tunnels	This displays how many tunnels has been successfully established.
Total Tunnels	This displays how many tunnels in total are configured in this VPN community.
Show Detail	Click this to display a screen where you can view detailed VPN settings among the devices.
Total Records	This entry displays the total number of records on the current page of the list.

14.2.1 By Community > Show Detail

Use this screen to monitor VPN tunnel status. To open this screen, click **Show Detail** in the **VPN Management** > **VPN Monitor** > **By Community** screen.

Figure 143 VPN Management > VPN Monitor > By Community > Show Detail


VPN Monitor > By Community > By Community
VPN Tunnel Status
Community Name : HQ-to-BO2
Page Size: 20
: Diagnostic
Local Gateway Remote Gateway Status Down/Up Time Diagnostic
1 ZW35-TW (10.1.1.37) ZW5 (10.1.1.143) 0 days 2 hrs 30 mins
Total Records:1
Refresh
Back
EXAMPLE

The following table describes the fields in this screen.

Table 124 VPN Management > VPN Monitor > By Community > Show Detail

LABEL	DESCRIPTION
Community Name	This field displays the name of the VPN community.
Page Size	Select this from the list box to set up to how many records you want to see in each page.
#	This is the number of an individual entry.
Local Gateway	This field displays the local gateway name and IP address of this tunnel.
Remote Gateway	This field displays the remote gateway name and IP address of this tunnel.

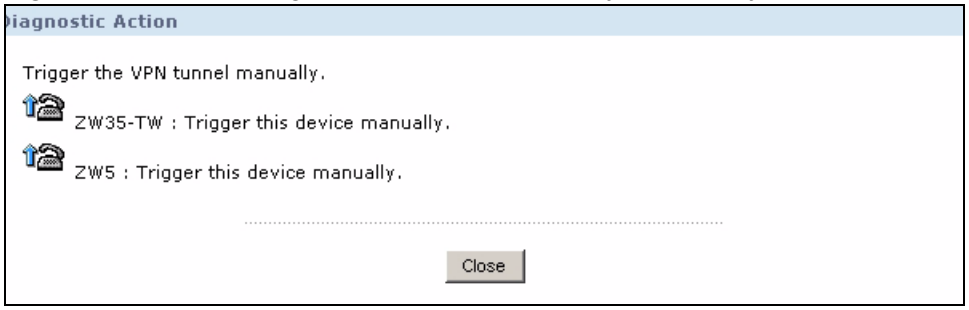
Table 124 VPN Management > VPN Monitor > By Community > Show Detail

LABEL	DESCRIPTION
Status	This field displays the VPN tunnel is on (connected icon) or off (disconnected icon). ***** display means it is a dynamic tunnel rule. **N/A** means the tunnel has not installed yet.
Down/Up Time	This displays the time duration the tunnel has been up or down. ***** display means it is a dynamic tunnel rule. **N/A** means the tunnel has not installed yet.
Diagnostic	This icon is available when the tunnel is disconnected. Click this to open a screen where you can perform diagnostic action.
Total Records	This entry displays the total number of records on the current page of the list.
Refresh	Click this to update the information in this screen.
Back	Click this to return to the previous screen.

14.2.2 By Community > Show Detail > Diagnostic

Use this screen to perform diagnostic action for a disconnected tunnel. To open this screen, click Diagnostic in the **VPN Management** > **VPN Monitor** > **By Community** > **Show Detail** screen.

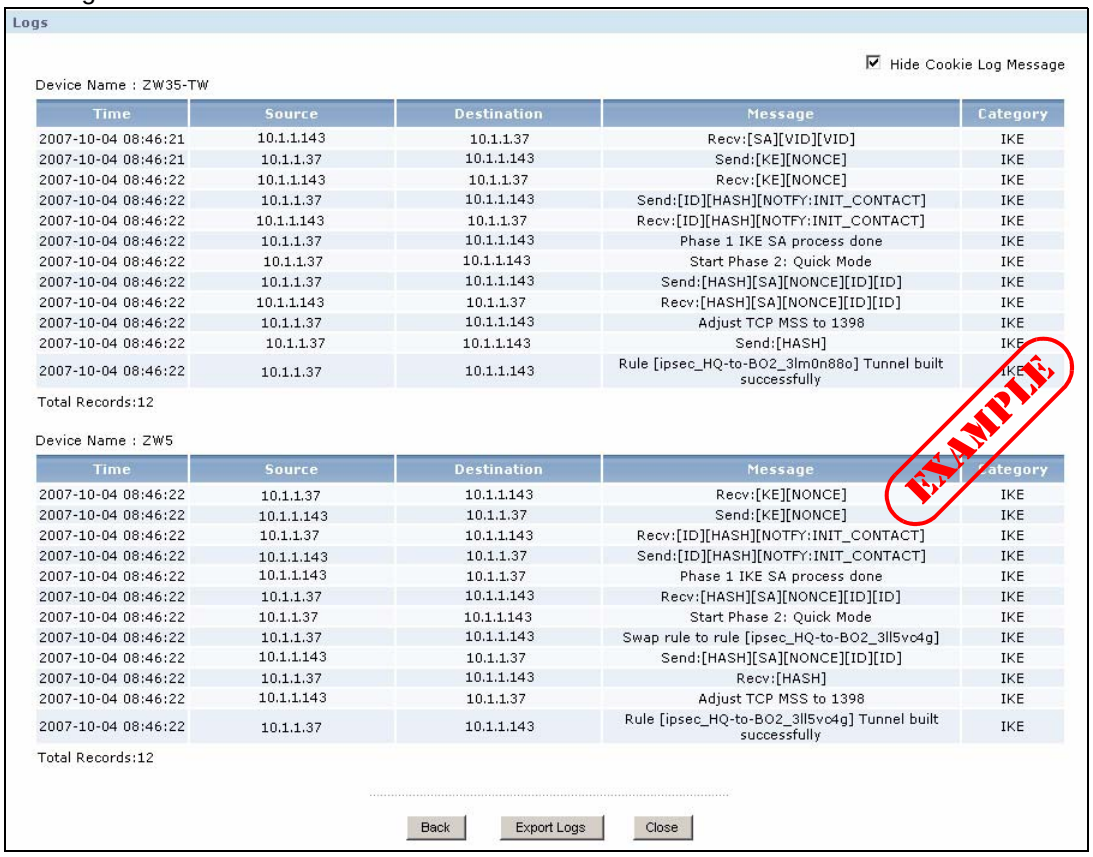
Figure 144 VPN Management > VPN Monitor > By Community > Show Detail > Diagnostic


Diagnostic Action
Trigger the VPN tunnel manually.
ZW35-TW : Trigger this device manually.
ZW5 : Trigger this device manually.
Close

Click a **Trigger** icon to initial the VPN tunnel from the device. It takes a while depending on your network environment. A Logs screen displays then. Following is an example.

In this example, the **ZW35-TW**'s VPN is triggered manually. Then you can see both two devices' logs and finally they establish the VPN tunnel successfully.

Figure 145 VPN Management > VPN Monitor > By Community > Show Detail > Diagnostic > Logs


Logs
Hide Cookie Log Message
Device Name : ZW35-TW
Time | Source | Destination | Message | Category
2007-10-04 08:46:21 | 10.1.1.143 | 10.1.1.37 | Recv:[SA][VID][VID] | IKE
2007-10-04 08:46:21 | 10.1.1.37 | 10.1.1.143 | Send:[KE][NONCE] | IKE
2007-10-04 08:46:22 | 10.1.1.143 | 10.1.1.37 | Recv:[KE][NONCE] | IKE
2007-10-04 08:46:22 | 10.1.1.37 | 10.1.1.143 | Send:[ID][HASH][NOTFY:INIT_CONTACT] | IKE
2007-10-04 08:46:22 | 10.1.1.143 | 10.1.1.37 | Recv:[ID][HASH][NOTFY:INIT_CONTACT] | IKE
2007-10-04 08:46:22 | 10.1.1.37 | 10.1.1.143 | Phase 1 IKE SA process done | IKE
2007-10-04 08:46:22 | 10.1.1.37 | 10.1.1.143 | Start Phase 2: Quick Mode | IKE
2007-10-04 08:46:22 | 10.1.1.37 | 10.1.1.143 | Send:[HASH][SA][NONCE][ID][ID] | IKE
2007-10-04 08:46:22 | 10.1.1.143 | 10.1.1.37 | Recv:[HASH][SA][NONCE][ID][ID] | IKE
2007-10-04 08:46:22 | 10.1.1.37 | 10.1.1.143 | Adjust TCP MSS to 1398 | IKE
2007-10-04 08:46:22 | 10.1.1.37 | 10.1.1.143 | Send:[HASH] | IKE
2007-10-04 08:46:22 | 10.1.1.37 | 10.1.1.143 | Rule [ipsec_HQ-to-BO2_3lm0n88o] Tunnel built successfully | IKE
Total Records:12
Device Name : ZW5
Time | Source | Destination | Message | Category
2007-10-04 08:46:22 | 10.1.1.37 | 10.1.1.143 | Recv:[KE][NONCE] | IKE
2007-10-04 08:46:22 | 10.1.1.143 | 10.1.1.37 | Send:[KE][NONCE] | IKE
2007-10-04 08:46:22 | 10.1.1.37 | 10.1.1.143 | Recv:[ID][HASH][NOTFY:INIT_CONTACT] | IKE
2007-10-04 08:46:22 | 10.1.1.143 | 10.1.1.37 | Send:[ID][HASH][NOTFY:INIT_CONTACT] | IKE
2007-10-04 08:46:22 | 10.1.1.143 | 10.1.1.37 | Phase 1 IKE SA process done | IKE
2007-10-04 08:46:22 | 10.1.1.37 | 10.1.1.143 | Recv:[HASH][SA][NONCE][ID][ID] | IKE
2007-10-04 08:46:22 | 10.1.1.37 | 10.1.1.143 | Start Phase 2: Quick Mode | IKE
2007-10-04 08:46:22 | 10.1.1.37 | 10.1.1.143 | Swap rule to rule [ipsec_HQ-to-BO2_3ll5vc4g] | IKE
2007-10-04 08:46:22 | 10.1.1.143 | 10.1.1.37 | Send:[HASH][SA][NONCE][ID][ID] | IKE
2007-10-04 08:46:22 | 10.1.1.37 | 10.1.1.143 | Recv:[HASH] | IKE
2007-10-04 08:46:22 | 10.1.1.143 | 10.1.1.37 | Adjust TCP MSS to 1398 | IKE
2007-10-04 08:46:22 | 10.1.1.37 | 10.1.1.143 | Rule [ipsec_HQ-to-BO2_3ll5vc4g] Tunnel built successfully | IKE
Total Records:12
EXAMPLE
Back
Export Logs
Close

The following table describes the fields in this screen.

Table 125 VPN Management > VPN Monitor > By Community > Show Detail > Diagnostic > Logs

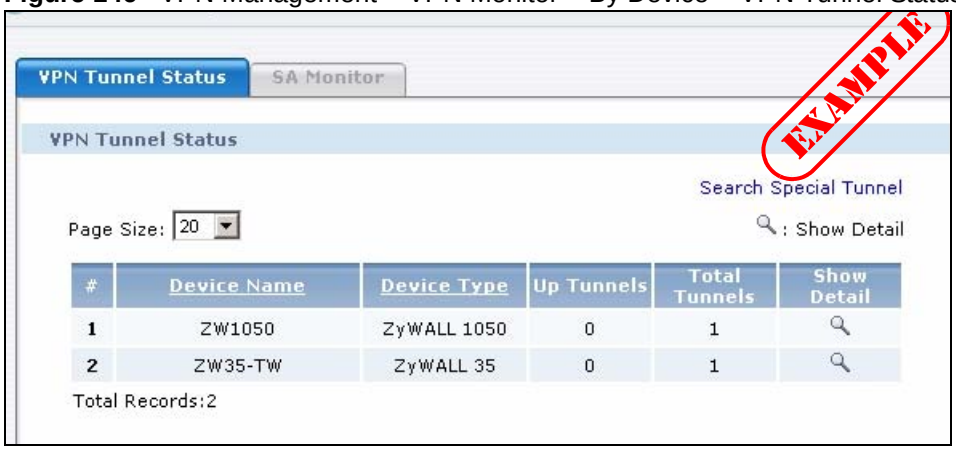
LABEL	DESCRIPTION
Hide Cookie Log Message	Select this to hide the IKE cookie logs.
Device Name:	This field displays the device name for the following logs section.
Time	This field displays the time the log was recorded.
Message	This field states the reason for the log. Refer to the device User's Guide for log message descriptions and the device CLI Reference Guide for details on using the command line interpreter to display logs.
Source	This field lists the source IP address and the port number of the incoming packet.
Destination	This field lists the destination IP address and the port number of the incoming packet.
Category	This displays the category type of the logs.
Total Records	This entry displays the total number of records on the current page of the list.
Back	Click this to return to the previous screen.
Export Logs	Click this to export the current logs shown in this screen to a TriggerLogsStore.csv file.
Close	Click this to close the diagnostic screens and return to the **VPN Tunnel Status** Screen.

14.3 By Device

14.3.1 VPN Tunnel Status

Use this menu item to monitor all VPN tunnel status for devices. To open this screen, click a device or a folder, and then click **VPN Management** from the menu bar and click **VPN Management** > **VPN Monitor** > **By Device** > **VPN Tunnel Status** in the navigation panel.

Figure 146 VPN Management > VPN Monitor > By Device > VPN Tunnel Status



The following table describes the fields in this screen.

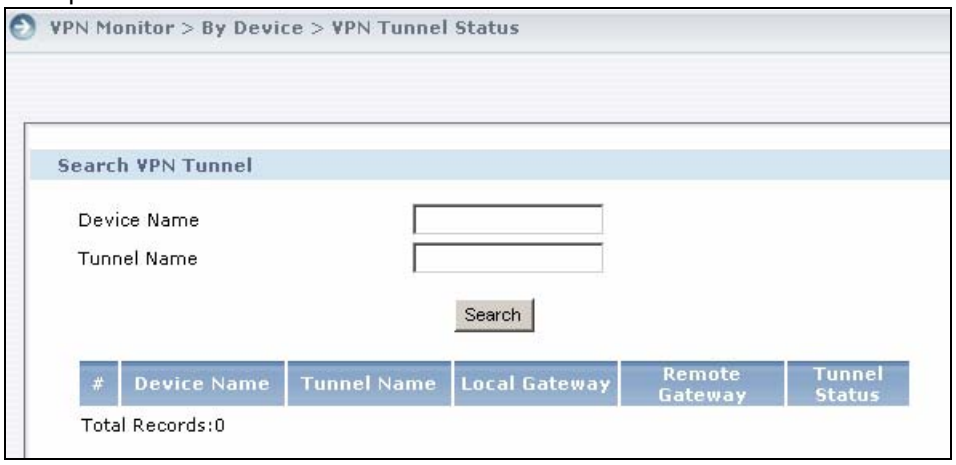
Table 126 VPN Management > VPN Monitor > By Device > VPN Tunnel Status

LABEL	DESCRIPTION
Page Size	Select this from the list box to set up to how many records you want to see in each page.
Search Special Tunnel	Click this link to display a screen where you can query and search
#	This is the number of an individual entry.
Community Name	This displays a name of the VPN community.
Community Type	This displays an VPN community type such as Full Mesh, Hub & Spoke, or Remote Access.
Up Tunnels	This displays how many tunnels has been successfully established.
Total Tunnels	This displays how many tunnels in total are configured in this VPN community.
Show Detail	Click this to display a screen where you can view detailed VPN settings among the devices. See Section 14.2.1 on page 258.
Total Records	This entry displays the total number of records on the current page of the list.

14.3.2 Search Special Tunnel

Use this screen to search one or some specific VPN tunnels by querying device name or tunnel name. To open this screen, click a device or a folder, and then click **VPN Management** from the menu bar and click **VPN Monitor** > **By Device** > **VPN Tunnel Status** in the navigation panel. Then click **Search Special Tunnel**.

Figure 147 VPN Management > VPN Monitor > By Device > VPN Tunnel Status > Search Special Tunnel



The following table describes the fields in this screen.

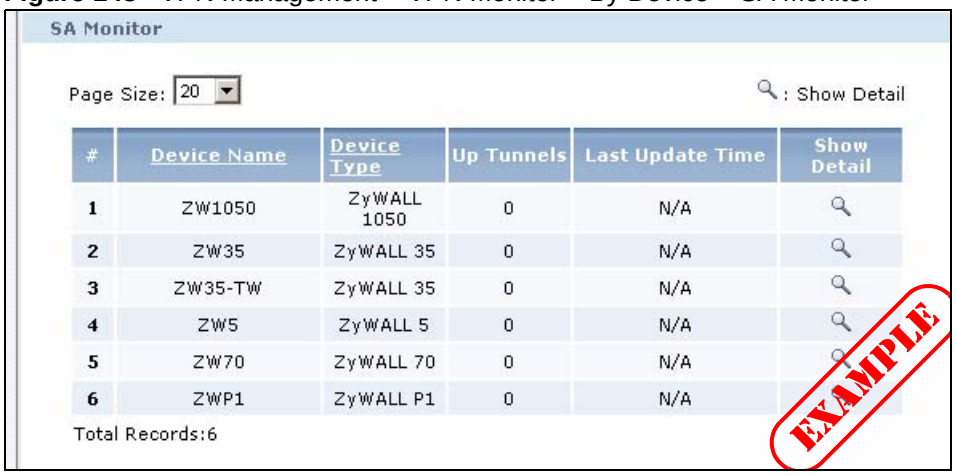
Table 127 VPN Management > VPN Monitor > By Device > VPN Tunnel Status > Search Special Tunnel

LABEL	DESCRIPTION
Device Name	Type a partial of or a full case-insensitive device name. A blank of device name is equivalent to “any”.
Tunnel Name	Type a partial or a full case-sensitive tunnel name. A blank of tunnel name is equivalent to “any”.
Search	Click this to query device(s) or tunnel(s) according to the device name and tunnel name you input. Clicking this with both fields empty queries all configured VPN tunnels.
#	This is the number of an individual entry.
Device Name	This displays the name of the device the VPN tunnel is configured for.
Tunnel Name	This displays the name of the tunnel.
Local Gateway	This displays the local VPN gateway IP address of this tunnel.
Remote Gateway	This displays the remote VPN gateway IP address of this tunnel.
Tunnel Status	This displays the current status of this tunnel
Total Records	This entry displays the total number of records on the current page of the list.

14.3.3 SA Monitor

Use this menu item to monitor all VPN tunnel status for devices. To open this screen, click **VPN Management** from the menu bar and click **VPN Monitor** > **By Device** > **SA Monitor** in the navigation panel.

Figure 148 VPN Management > VPN Monitor > By Device > SA Monitor


SA Monitor
Page Size: 20
: Show Detail
Device Name Device Type Up Tunnels Last Update Time Show Detail
1 ZW1050 ZyWALL 1050 0 N/A
2 ZW35 ZyWALL 35 0 N/A
3 ZW35-TW ZyWALL 35 0 N/A
4 ZW5 ZyWALL 5 0 N/A
5 ZW70 ZyWALL 70 0 N/A
6 ZWP1 ZyWALL P1 0 N/A
Total Records:6
EXAMPLE

The following table describes the fields in this screen.

Table 128 VPN Management > VPN Monitor > By Device > SA Monitor

LABEL	DESCRIPTION
Page Size	Select this from the list box to set up to how many records you want to see in each page.
#	This is the number of an individual entry.
Device Name	This displays the name of the device.
Device Type	This displays the model of the device.
Up Tunnels	This displays how many tunnels has been established.
Last Update Time	This displays when the information was last updated.
Show Detail	Click this to see the detailed VPN settings of the device. See Section 14.2.1 on page 258.
Total Records	This entry displays the total number of records on the current page of the list.

PART IV
Monitor

Device Status Monitor (267)
Device HA Status Monitor (269)
Device Alarm (271)

15

Device Status Monitor

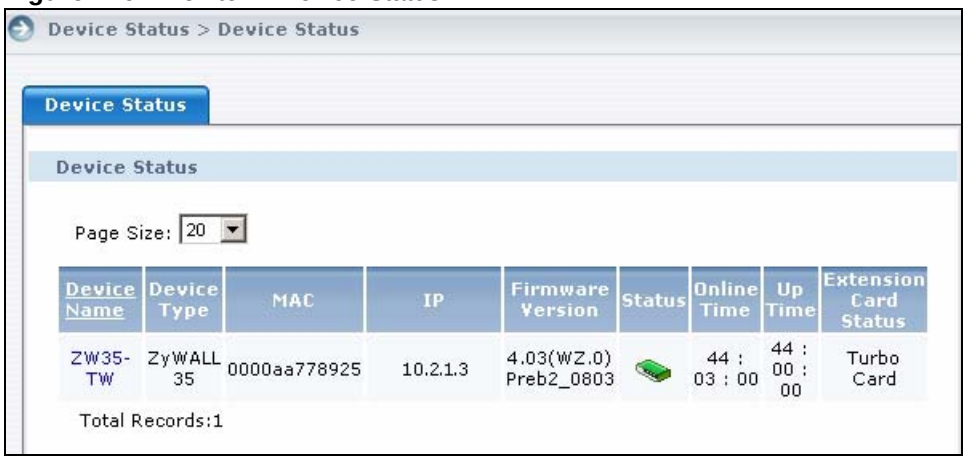
This chapter describes the device status monitor.

15.1 Device Status

This report shows a summary of device status. To open this screen, click **Monitor** in the menu bar and then click **Device Status** in the navigation panel.

Right click on the screen and click **Refresh** to get latest device status.

Figure 149 Monitor > Device Status



The following table describes the labels in this screen.

Table 129 Monitor > Device Status

LABEL	DESCRIPTION
Page Size	Select this from the list box to set up to how many records you want to see in each page.
Device Name	This displays the name of the device. Click the device name to locate and highlight the device in the device window.
Device Type	This displays the administrator who performed the upgrade.
MAC	This displays the device's MAC address.
IP	This displays the IP address the device is using.

Table 129 Monitor > Device Status

LABEL	DESCRIPTION
Firmware Version	This displays the firmware version number of the device.
Status	This displays the current status of the device.
Online Time	This displays how long the device has registered and connected to the Vantage CNM server since last booted up.
Up Time	This displays how long the device has been on since last booted up.
Extension Card Status	**Turbe Card** display means a turbo card is installed in this device. **3G Card** display means a wireless 3G card is installed in this device. **Wireless Card** display means a Wi-Fi wireless card is installed in this device. **N/A** means no any expension card is installed in this device.

16

Device HA Status Monitor

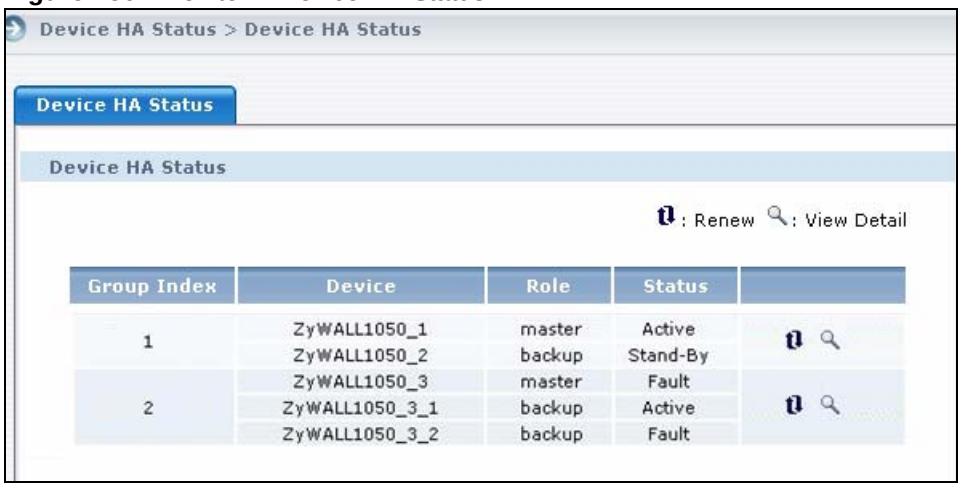
This chapter describes the monitor for device high availability (HA) status on ZLD ZyWALL device(s) such as ZyWALL 1050 or ZyWALL USG series.

16.1 Device HA Status

This report shows a summary of device status. To open this screen, select a ZLD device, click **Monitor** in the menu bar and then click **Device HA Status** in the navigation panel.

You can see HA status in this screen only if you allow the Vantage CNM able to monitor the device HA status for the device. Refer to Figure 12 on page 42.

Figure 150 Monitor > Device HA Status



The following table describes the labels in this screen.

Table 130 Monitor > Device HA Status

LABEL	DESCRIPTION
Group Index	This is the index number of the device HA group.
Device	This field displays the device name.
Role	This field displays the device HA role such as **master** or **backup**.

Table 130 Monitor > Device HA Status

LABEL	DESCRIPTION
Status	This field displays the device's current HA status. If the device is a master deivce, the possible status are: • **Active**: All VRRP interfaces status on the device are active. • **Fault**: One or more VRRP interfaces status on the device are inactive. If the device is a backup deivce, the possible status are: • **Active**: All VRRP interfaces status on the device are active. • **Stand-By**: All VRRP interfaces status on the device are Stand-By. • **Fault**: Other cases exept the previous two.
Renew	Click this to get the latest device HA status on the Vantage CNM.
View Detail	Click this to display the screen where you can see detailed HA information for all HA interfaces on the device.

17

Device Alarm

17.1 Device Alarm

Alarms are time-critical information that the device automatically sends out at the time of occurrence. You may have administrators automatically e-mailed when an alarm occurs in the **CNM System Setting** > **Configuration** > **Notification** screen. See Section 21.4.1 on page 304.

17.1.1 Alarm Types

There are three types of alarms.

Table 131 Types of Alarms

TYPE	DESCRIPTION
All	This displays all types of alarms.
Device	This is an alarm such as hardware failure or the network connection is down.
CNM	This is an alarm such as server communication error or illegal Vantage CNM login attempt.

17.1.2 Alarm Classifications

There are four alarm severity classifications.

Table 132 Alarm Severity

SEVERITY	DESCRIPTION
All	This displays all alarm severities.
Fatal	This is an alarm such as unrecoverable hardware failure.
Major	This is an alarm such as an attack.
Minor	This is an alarm such as a recoverable hardware error.
Warning	This is an alarm such as an illegal Vantage CNM login attempt.

17.1.3 Alarm States

When an alarm is received by Vantage CNM, it can be in one of three states:

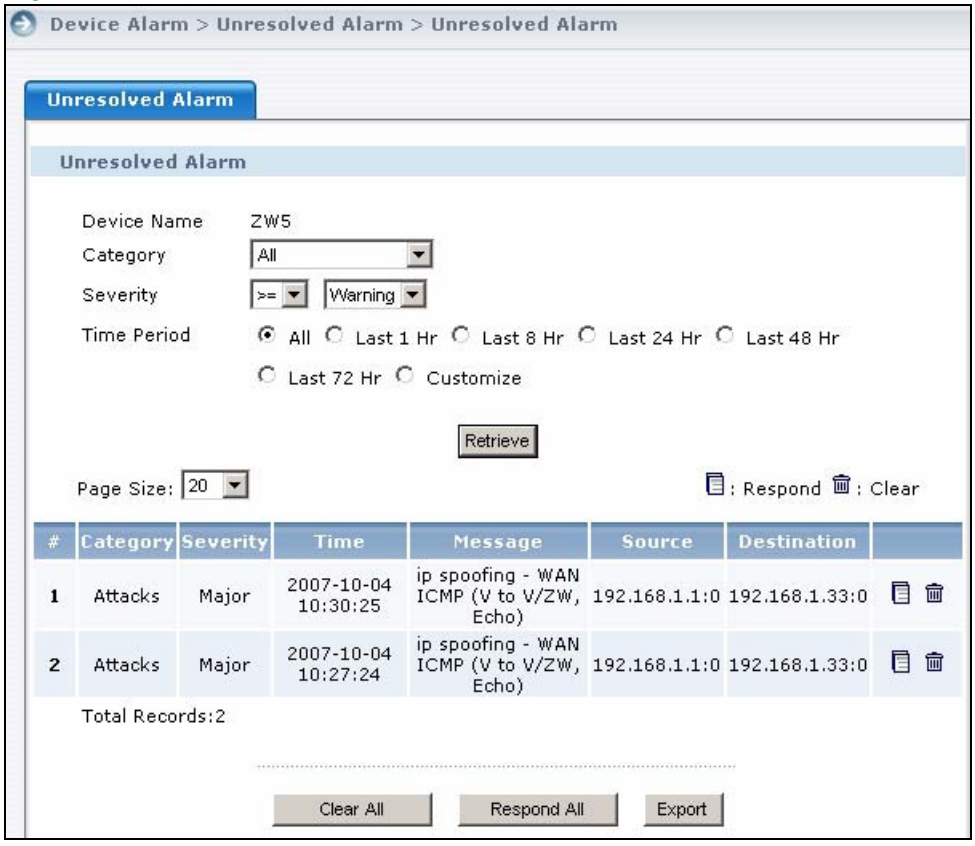
Table 133 Alarm States

STATE	DESCRIPTION
Active	This is the initial state of an alarm, which means this alarm is new and no one has assumed responsibility for handling it yet.
Acknowledged	This means that one administrator has decided to respond to the cause of this alarm. Other administrators see that person's name in their alarm screen and so duplicate effort in solving the same problem is avoided.
Cleared	After the administrator has solved the cause of the alarm, he/she can clear the alarm. When an alarm is cleared, it is removed from the current alarm screen and becomes an historical alarm.

17.1.4 Unresolved Alarms

View recent alarms and who has taken care of or is taking care of them in this screen. An alarm becomes historical after selecting **Clear**. To open this screen, click a folder or a device, and then click **Monitor** in the menu bar, click **Device Alarm** > **Unresolved Alarm** in the nevigation panel.

Figure 151 Monitor > Device Alarm > Unresolved Alarm


Device Alarm > Unresolved Alarm > Unresolved Alarm
Unresolved Alarm
Unresolved Alarm
Device Name ZW5
Category All
Severity >= Warning
Time Period All Last 1 Hr Last 8 Hr Last 24 Hr Last 48 Hr
Last 72 Hr Customize
Retrieve
Page Size: 20
: Respond : Clear
Category Severity Time Message Source Destination
1 Attacks Major 2007-10-04 10:30:25 ip spoofing - WAN ICMP (V to V/ZW, Echo) 192.168.1.1:0 192.168.1.33:0
2 Attacks Major 2007-10-04 10:27:24 ip spoofing - WAN ICMP (V to V/ZW, Echo) 192.168.1.1:0 192.168.1.33:0
Total Records:2
Clear All
Respond All
Export

The following table describes the fields in this screen.

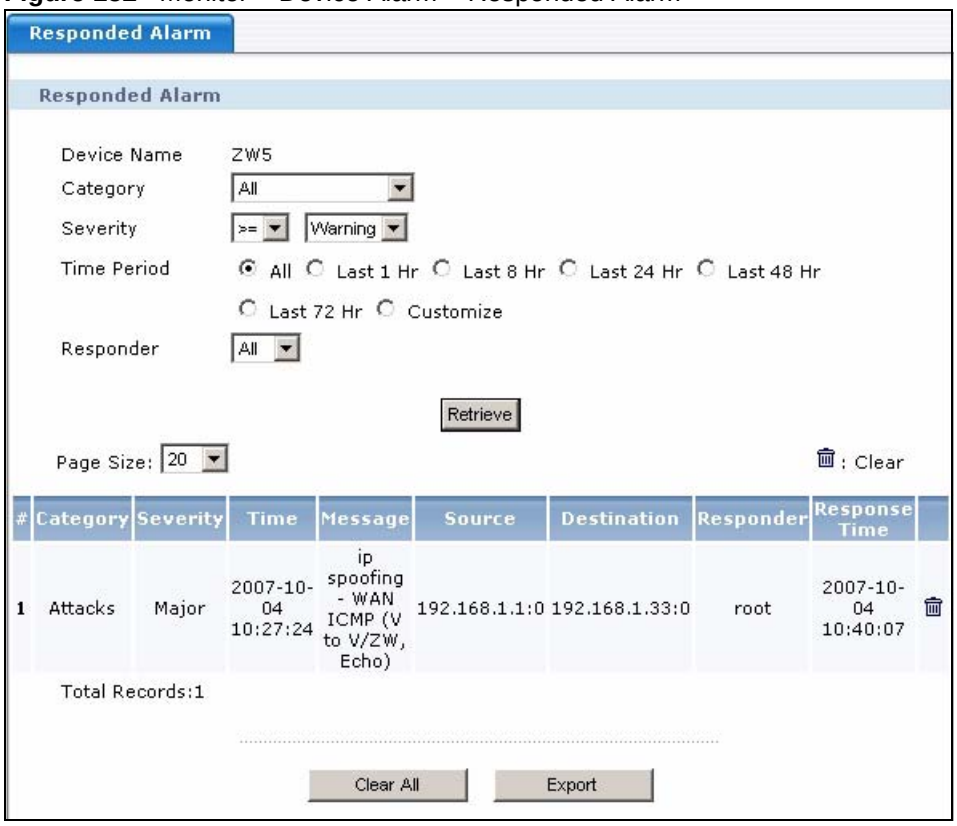
Table 134 Monitor > Device Alarm > Unresolved Alarm

STATE	DESCRIPTION
Device Name/ Folder Name	This field displays the selected device or folder.
Platform	This is available if you select a folder. Select the platform you wish to view.
Category	Select the type of alarm you wish to view.
Severity	Select the severity of alarm you wish to view.
Time Period	Select the time period for which you wish to view alarms.
Retrieve	Click this to update the list of alarms based on the specified criteria.
Page Size	
#	This is the number of an individual entry.
Device Name	This field displays the name of the device that generated the alarm.
Category	This field displays the type of alarm.
Severity	This field displays the alarm severity.
Time	This field displays the time the alarm occurred.
Message	This field displays the reason the alarm occurred.
Source	This field lists the source IP address and the port number of the incoming packet.
Destination	This field lists the destination IP address and the port number of the incoming packet.
Respond	Click this to take responsibility for finding the cause of this alarm and move this record from this screen to the **Device Alarm** > **Responded Alarm** screen.
Clear	Click this to remove the alarm from the monitor. See Section 17.1.5 on page 273.
Total Records	This entry displays the total number of records on the current page of the list.
Clear All	Click this to remove all of the alarms in the list from the monitor. See Section 17.1.5 on page 273.
Respond All	Click this to respond to all of the alarms in the list.
Export	Click this to export the current information in this screen to an AlarmStore.csv file.

17.1.5 Responded Alarm

Responded alarms are alarms that have been responded by an administrator.

Figure 152 Monitor > Device Alarm > Responded Alarm



The following table describes the fields in this screen.

Table 135 Monitor > Device Alarm > Responded Alarm

STATE	DESCRIPTION
Device Name/ Folder Name	This field displays the selected device or folder.
Platform	This is available if you select a folder. Select the platform you wish to view.
Category	Select the type of alarm you wish to view.
Severity	Select the severity of alarm you wish to view.
Time Period	Select the time period for which you wish to view alarms.
Responder	Select alarms based on the administrator who is supposed to respond to them.
Retrieve	Click this to update the list of alarms based on the specified criteria.
Page Size	
#	This is the number of an individual entry.
Category	This field displays the type of alarm.
Severity	This field displays the alarm severity.
Time	This field displays the time the alarm occurred.
Message	This field displays the reason the alarm occurred.
Source	This field lists the source IP address and the port number of the incoming packet.
Destination	This field lists the destination IP address and the port number of the incoming packet.
Responder	This field displays the administrator who responded to the alarm.

Table 135 Monitor > Device Alarm > Responded Alarm (continued)

STATE	DESCRIPTION
Response Time	This field displays the time the alarm occurred.
Clear	Click this to remove the alarm from the monitor. See Section 17.1.5 on page 273.
Total Records	This entry displays the total number of records on the current page of the list.
Clear All	Click this to remove all of the alarms in the list from the monitor. See Section 17.1.5 on page 273.
Export	Click this to export the current information in this screen to an AlarmStore.csv file.

PART V
Log & Report

Device Operation Report (279)
CNM Logs (291)
VRPT (293)

18

Device Operation Report

Use this menu items to see summary reports for the tasks you submit to the devices through Vantage CNM web configurator.

18.1 Firmware Upgrade Report

Firmware Upgrade means that Vantage CNM signals the device to request a firmware FTP upload from Vantage CNM. This report shows a summary of firmware upgrades. See Section 10.3 on page 237. To open this screen, click **Log & Report** in the menu bar and then click **Operation Report** > **Firmware Upgrade Report** in the nevigation panel.

Figure 153 Log & Report > Operation Report > Firmware Upgrade Report (Device)

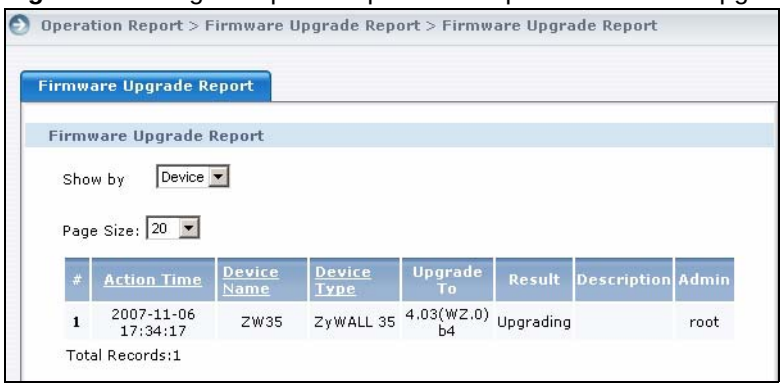
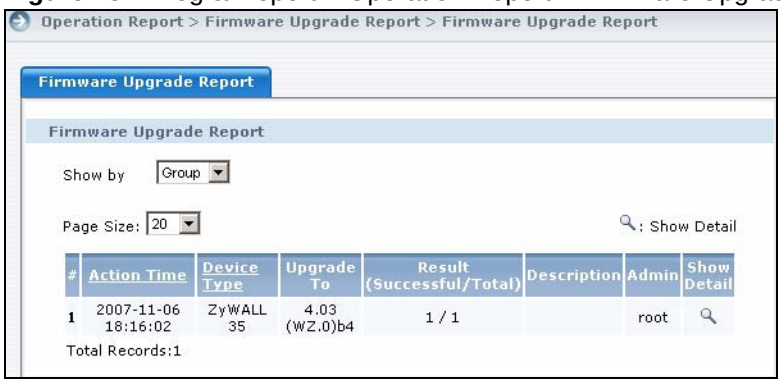

Operation Report > Firmware Upgrade Report > Firmware Upgrade Report
Firmware Upgrade Report
Firmware Upgrade Report
Show by
Device
Page Size:
20
Action Time Device Name Device Type Upgrade To Result Description Admin
1 2007-11-06 17:34:17 ZW35 ZyWALL 35 4.03(WZ.0) b4 Upgrading root
Total Records:1

Figure 154 Log & Report > Operation Report > Firmware Upgrade Report (Group)


Operation Report > Firmware Upgrade Report > Firmware Upgrade Report
Firmware Upgrade Report
Firmware Upgrade Report
Show by
Group
Page Size:
20
: Show Detail
Action Time Device Type Upgrade To Result (Successful/Total) Description Admin Show Detail
1 2007-11-06 18:16:02 ZyWALL 35 4.03 (WZ.0)b4 1 / 1 root
Total Records:1

The following table describes the labels in this screen.

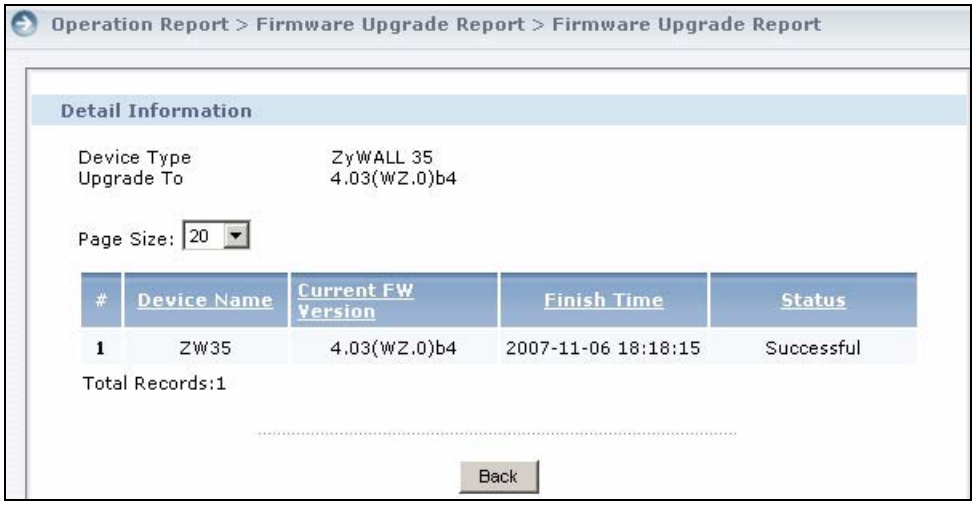
Table 136 Log & Report > Operation Report > Firmware Upgrade Report

LABEL	DESCRIPTION
Show by	Select this to display the firmware upgrade by devices or by groups. Select **device** or **group** if you want to see the device firmware upgrade records which were applied based on a device or a folder.
Page Size	Select this from the list box to set up how many records you want to see in each page.
#	This is the number of an individual entry.
Action Time	This displays the time at which the upgrade was performed.
Device Name	This is available if you select showing by device. This displays the device name.
Device Type	This displays the device type.
Upgrade To	This is the firmware version which the upgrade was upgraded to.
Result	This is available if you select showing by device. This shows the upgrade is performing (**Upgrading**) or was performed (**Successful** or **Failed**).
Result (Successful/ Total)	This is available if you select showing by group. This is the result that displays how many upgrades were requested and how many upgrades in them were successfully performed.
Description	This is addional note for this operation entered when this operation was created.
Admin	This displays the administrator who performed the upgrade.
Show Detail	This is available if you select showing by group. Click this to open a screen where you can see detailed firmware upgrade information.
Toal Records	This entry displays the total number of records on the current page of the list.

18.1.1 Firmware Report Details

This report shows more information for each device firmware upgrade result performed in a group firmware upgrade. See Section 10.3 on page 237. To open this report, click **Show Detail** in the **Log & Report** > **Operation Report** > **Firmware Upgrade Report** screen showing by group.

Figure 155 Log & Report > Operation Report > Firmware Upgrade Report (Group) > Show Detail



The following table describes the labels in this screen.

Table 137 Log & Report > Operation Report > Firmware Upgrade Report (Group) > Show Detail

LABEL	DESCRIPTION
Device Type	This is the type for the device.
Upgrade To	This displays the firmware version the device was upgraded to.
Page Size	Select this from the list box to set up how many records you want to see in each page.
#	This field shows the index number of the entry.
Device Name	This field displays the name of each device that was upgraded.
Current FW Version	This field displays the firmware version number the device is currently using.
Finish Time	This field displays the time at which the upgrade was performed.
Status	This field displays whether the upgrade was successful, failed, or timed out.
Total Record	This entry displays the total number of records on the current page of the file list.
Back	Click this to return to the previous screen.

18.2 Configuration Report

Use this screen to look at operation records for a device or groups. To open this screen, click **Log & Report** > **Operation Report** > **Configuration Report**.

Figure 156 Log & Report > Operation Report > Configuration Report (Device)

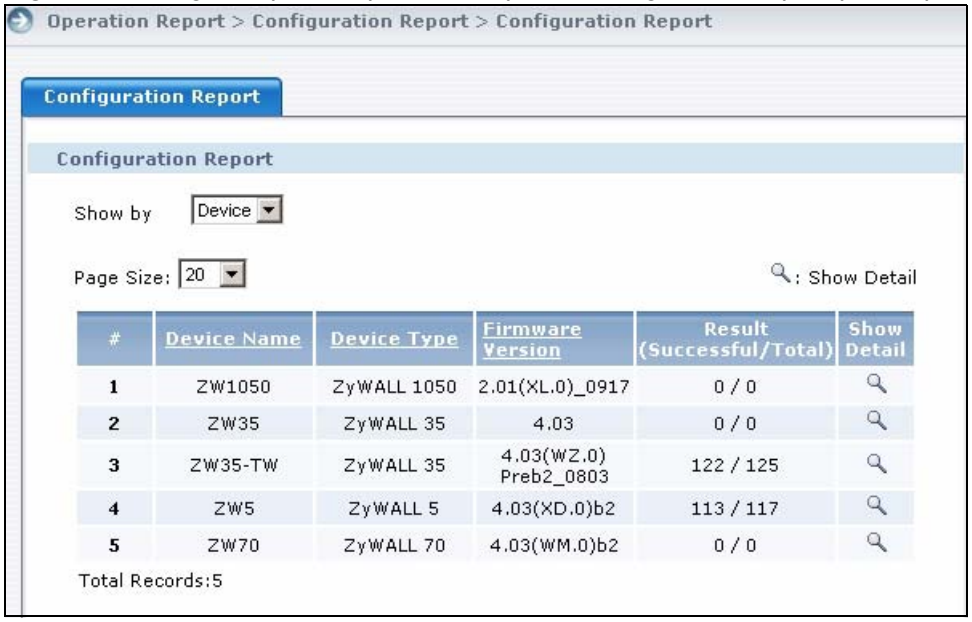
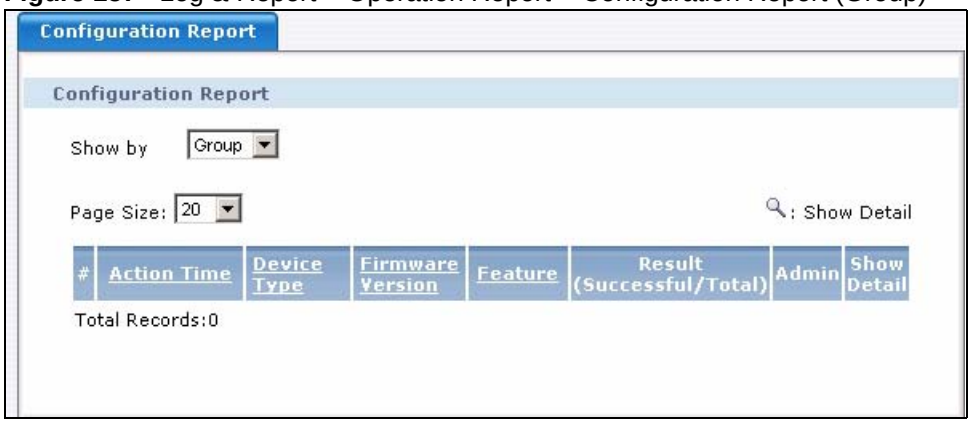

Operation Report > Configuration Report > Configuration Report
Configuration Report
Configuration Report
Show by
Device
Page Size:
20
: Show Detail
| Device Name | Device Type | Firmware Version | Result (Successful/Total) | Show Detail
1 | ZW1050 | ZyWALL 1050 | 2.01(XL.0)_0917 | 0 / 0
2 | ZW35 | ZyWALL 35 | 4.03 | 0 / 0
3 | ZW35-TW | ZyWALL 35 | 4.03(WZ.0) Preb2_0803 | 122 / 125
4 | ZW5 | ZyWALL 5 | 4.03(XD.0)b2 | 113 / 117
5 | ZW70 | ZyWALL 70 | 4.03(WM.0)b2 | 0 / 0
Total Records:5

Figure 157 Log & Report > Operation Report > Configuration Report (Group)



The following table describes the labels in this screen.

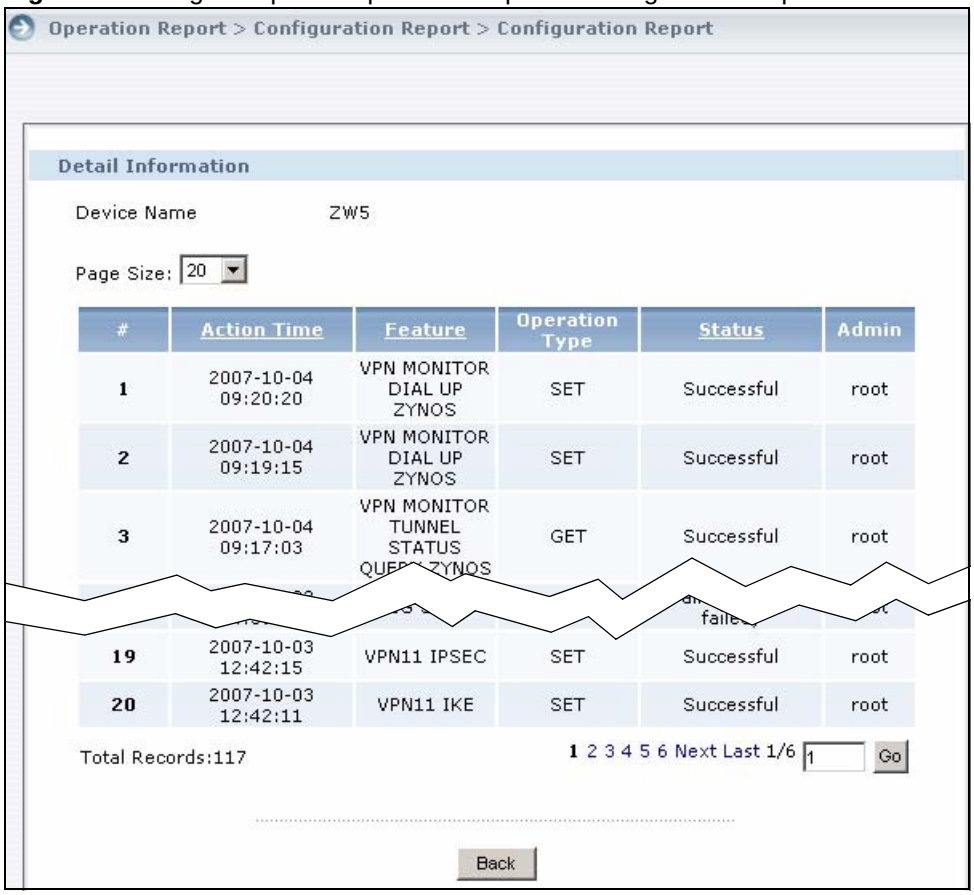
Table 138 Log & Report > Operation Report > Configuration Report

LABEL	DESCRIPTION
Show by	Select this to display the configuration operation list shown by devices or by groups.
Page Size	Select this from the list box to set up how many records you want to see in each page.
#	This is the number of an individual entry.
Device Name	This is available if you select showing by device. This displays the device name. You can click the label to sort by this column.
Action Time	This is available if you select showing by group. This field displays the date and time the operation was requested.
Device Type	This displays the device type. You can click the label to sort by this column.
Firmware Version	This displays the firmware version the device is using.
Feature	This is available if you select showing by group. This field displays the settings that are affected by the operation.
Result (Successful/ Total)	This is available if you select showing by group. This is the result that displays how many operation were requested in total and how many operation in them were successfully performed. This field displays the total number of devices to which the operation was applied successfully.
Admin	This field displays the name of the administrator who performed the operation.
Show Detail	Click this to open a screen where you can see detailed information.
Toal Records	This entry displays the total number of records on the current page of the list.

18.2.1 Configuration Report Details

Use this screen to look at the detailed status of an configuration operation. To open this screen, click **Log & Report** > **Operation Report** > **Configuration Report**, and then click **Show Details** next to the device.

Figure 158 Log & Report > Operation Report > Configuration Report > Show Details


Operation Report > Configuration Report > Configuration Report
Detail Information
Device Name ZW5
Page Size: 20
Action Time Feature Operation Type Status Admin
1 2007-10-04 09:20:20 VPN MONITOR DIAL UP ZYNOS SET Successful root
2 2007-10-04 09:19:15 VPN MONITOR DIAL UP ZYNOS SET Successful root
3 2007-10-04 09:17:03 VPN MONITOR TUNNEL STATUS QUE ZYNOS GET Successful root
19 2007-10-03 12:42:15 VPN11 IPSEC SET Successful root
20 2007-10-03 12:42:11 VPN11 IKE SET Successful root
Total Records:117
1 2 3 4 5 6 Next Last 1/6 1 Go
Back

The following table describes the labels in this screen.

Table 139 Log & Report > Operation Report > Configuration Report > Show Details

LABEL	DESCRIPTION
Device Name	This field displays the device name of this report.
Page Size	Select this from the list box to set up how many records you want to see in each page.
#	This is the number of an individual entry.
Action Time	This field displays the date and time the operation was requested. You can click the label to sort by this column.
Feature	This field displays the settings that are affected by the operation. You can click the label to sort by this column.
Operation Type	This field displays the operation type of the configuration operation. **SET** display means this operation was performed from Vantage CNM to the device. **GET** display means this operation was requested by Vantage CNM to get the information from the device.
Status	This field displays the status of the operation on the device such as **Succeed**, **Failed(time out)**, **Failed(device failed)** and **Pending**. You can click the label to sort by this column.
Admin	This field displays the name of the administrator who performed the operation.
Total Records	This field displays the total number of devices to which the operation is applied.
Back	Click this to return to the previous screen.

18.3 Configuration File Backup Report

Use this screen to look at configuration file backup records for a device or groups. Refer to Section 9.2.1 on page 215. To open this screen, click **Log & Report** in the menu bar and then **Operation Report** > **Configuration File Backup & Restore Report** > **Backup Report** in the navigation panel.

Figure 159 Log & Report > Operation Report > Configuration File Backup & Restore Report > Backup Report (Device)

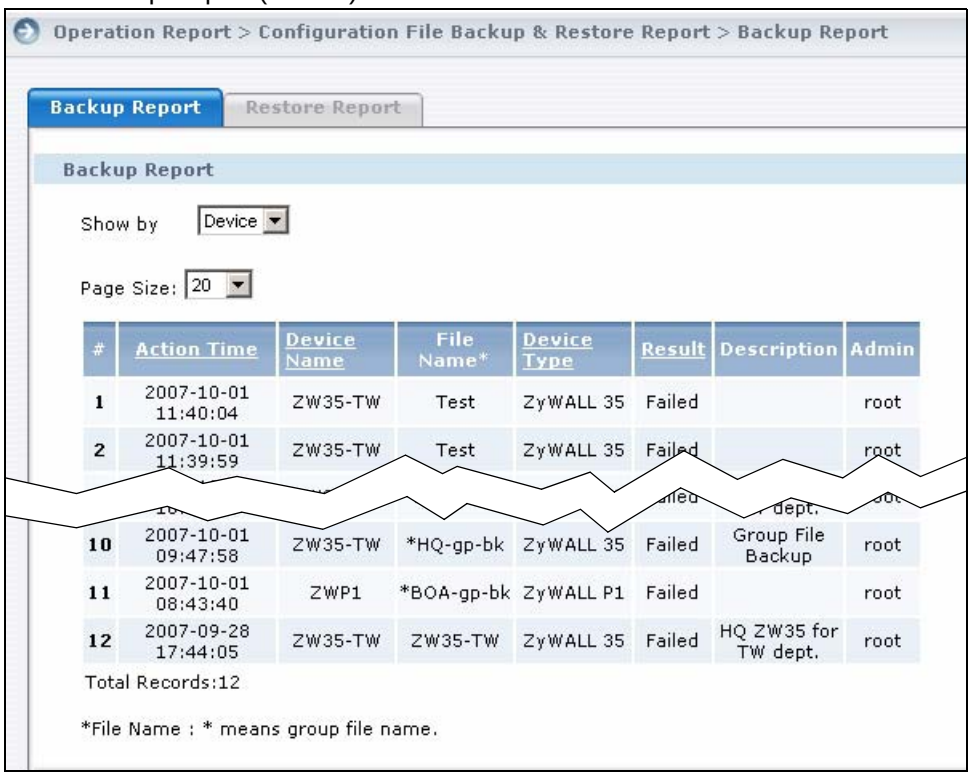
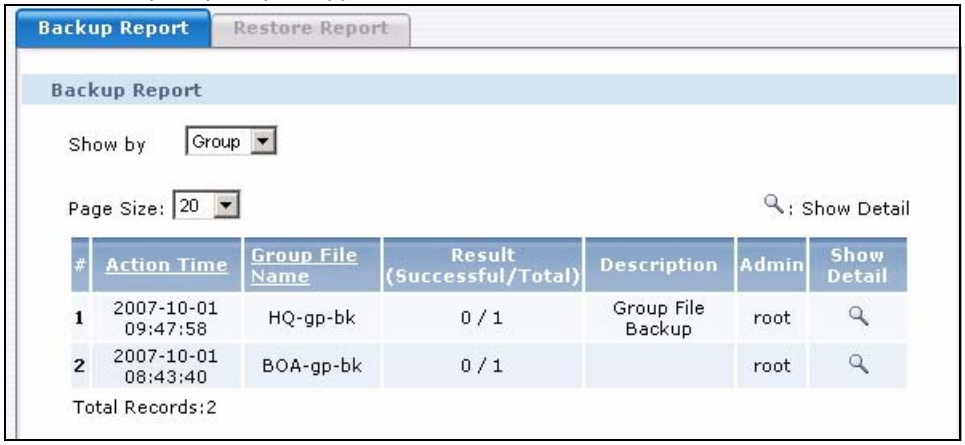

Operation Report > Configuration File Backup & Restore Report > Backup Report
Backup Report
Restore Report
Backup Report
Show by Device
Page Size: 20
Action Time Device Name File Name* Device Type Result Description Admin
1 2007-10-01 11:40:04 ZW35-TW Test ZyWALL 35 Failed root
2 2007-10-01 11:39:59 ZW35-TW Test ZyWALL 35 Failed root
10 2007-10-01 09:47:58 ZW35-TW *HQ-gp-bk ZyWALL 35 Failed Group File Backup root
11 2007-10-01 08:43:40 ZWP1 *BOA-gp-bk ZyWALL P1 Failed root
12 2007-09-28 17:44:05 ZW35-TW ZW35-TW ZyWALL 35 Failed HQ ZW35 for TW dept. root
Total Records:12
*File Name : * means group file name.

Figure 160 Log & Report > Operation Report > Configuration File Backup & Restore Report > Backup Report (Group)


Backup Report
Restore Report
Backup Report
Show by Group
Page Size: 20
: Show Detail
Action Time Group File Name Result (Successful/Total) Description Admin Show Detail
1 2007-10-01 09:47:58 HQ-gp-bk 0 / 1 Group File Backup root
2 2007-10-01 08:43:40 BOA-gp-bk 0 / 1 root
Total Records:2

The following table describes the labels in this screen.

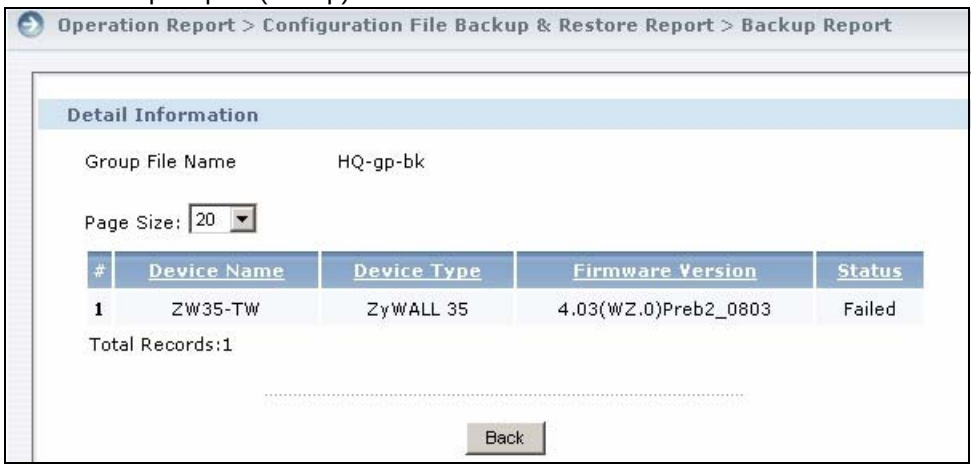
Table 140 Log & Report > Operation Report > Configuration File Backup & Restore Report > Backup Report

LABEL	DESCRIPTION
Show by	Select this to display the configuration operation list shown by devices or by groups.
Page Size	Select this from the list box to set up how many records you want to see in each page.
#	This is the number of an individual entry.
Action Time	This is available if you select showing by group. This field displays the date and time the operation was requested.
Device Name	This is available if you select showing by device. This displays the device name for the configuration file backup.
File Name	This is available if you select showing by device. This displays the backup file name.
Group File Name	This is available if you select showing by group. This displays the group backup file name.
Device Type	This displays the device type. You can click the label to sort by this column.
Result	This is available if you select showing by device. This displays the result the operation was performed.
Result (Successful/ Total)	This is available if you select showing by group. This is the result that displays how many operation were requested in total and how many operation in them were successfully performed. This field displays the total number of devices to which the operation was applied successfully.
Description	This is addional note for this operation entered when this operation was created.
Admin	This field displays the name of the administrator who performed the operation.
Show Detail	Click this to open a screen where you can see detailed information.
Toal Records	This entry displays the total number of records on the current page of the list.

18.3.1 Configuration File Backup Report Details

Use this screen to look at the detailed status of an configuration operation. To open this screen, click **Show Detail** on a group backup record, click **Log & Report** in the menu bar and then click **Operation Report** > **Configuration File Backup & Restore Report** > **Backup Report**.

Figure 161 Log & Report > Operation Report > Configuration File Backup & Restore Report > Backup Report (Group) > Show Detail



The following table describes the labels in this screen.

Table 141 Log & Report > Operation Report > Configuration File Backup & Restore Report > Backup Report (Group) > Show Detail

LABEL	DESCRIPTION
Group File Name	This displays the group configuration backup file name for this report.
Page Size	Select this from the list box to set up how many records you want to see in each page.
#	This is the number of an individual entry.
Device Name	This field displays the device name of the operation. You can click the label to sort by this column.
Device Type	This field displays the device type of the operation. You can click the label to sort by this column.
Firmware Version	This field displays the firmware version of the device when this operation was performed. You can click the label to sort by this column.
Status	This field displays the status of the operation on the device such as **Succeed**, **Failed** and **Pending**. You can click the label to sort by this column.
Total Records	This field displays the total number of devices to which the operation is applied.
Back	Click this to return to the previous screen.

18.4 Configuration File Restore Report

Use this screen to look at configuration file restore records for a device or groups. Refer to Section 9.2.1 on page 215. To open this screen, click **Log & Report** in the menu bar and then click **Operation Report** > **Configuration File Backup & Restore Report** > **Restore Report** in the navigation panel.

Figure 162 Log & Report > Operation Report > Configuration File Backup & Restore Report > Restore Report (Device)

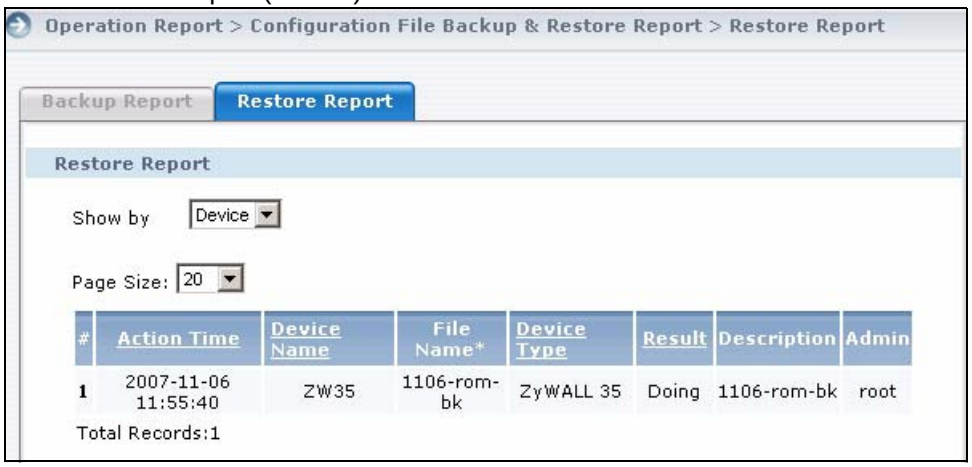
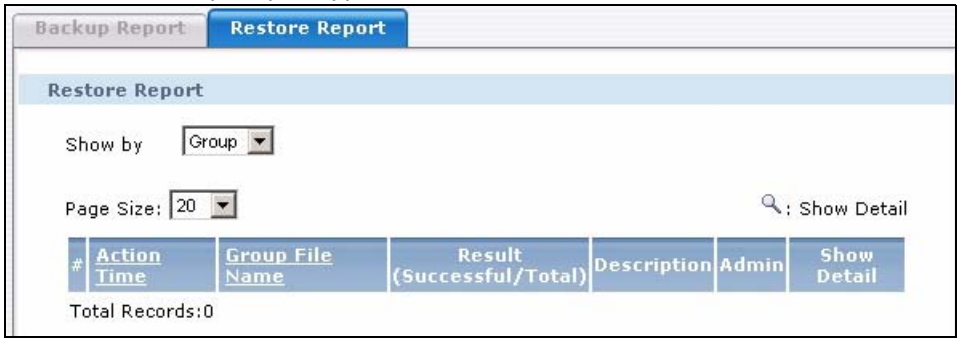

Operation Report > Configuration File Backup & Restore Report > Restore Report
Backup Report
Restore Report
Restore Report
Show by
Device
Page Size:
20
Action Time Device Name File Name* Device Type Result Description Admin
1 2007-11-06 11:55:40 ZW35 1106-rom-bk ZyWALL 35 Doing 1106-rom-bk root
Total Records:1

Figure 163 Log & Report > Operation Report > Configuration File Backup & Restore Report > Restore Report (Group)



The following table describes the labels in this screen.

Table 142 Log & Report > Operation Report > Configuration File Backup & Restore Report > Backup Report

LABEL	DESCRIPTION
Show by	Select this to display the configuration operation list shown by devices or by groups.
Page Size	Select this from the list box to set up how many records you want to see in each page.
#	This is the number of an individual entry.
Action Time	This is available if you select showing by group. This field displays the date and time the operation was requested.
Device Name	This is available if you select showing by device. This displays the device name for the configuration file restore.
File Name	This is available if you select showing by device. This displays the restore file name.
Group File Name	This is available if you select showing by group. This displays the group restore file name.
Device Type	This displays the device type. You can click the label to sort by this column.
Result	This is available if you select showing by device. This displays the result the operation is performing (**Doing**) or was performed (**Successful** or **Failed**).

Table 142 Log & Report > Operation Report > Configuration File Backup & Restore Report > Backup Report (continued)

LABEL	DESCRIPTION
Result (Successful/ Total)	This is available if you select showing by group. This is the result that displays how many operation has been successfully performed and the total operation requests.
Description	This is addional note for this operation entered when this operation was created.
Admin	This field displays the name of the administrator who performed the operation.
Show Detail	Click this to open a screen where you can see detailed information.
Toal Records	This entry displays the total number of records on the current page of the list.

18.5 Signature Profile Backup Report

Use this screen to look at the backup records of device signature profile. Refer to Section 9.5.2 on page 225. To open this screen, click **Log & Report** in the menu bar and then click **Operation Report** > **Signature Profile Backup & Restore Report** > **Backup Report** in the navigation panel.

Figure 164 Log & Report > Operation Report > Signature Profile Backup & Restore Report > Backup Report

Operation Report > Signature Profile Backup & Restore Report > Backup Report
Backup Report
Restore Report
Backup Report
Page Size: 20
Action Time Device Name Profile Name Signature Version Type Result Description Admin
1 2007-10-01 16:32:13 ZW35-TW 1001-ZW35-sig-AV v1.457 IDP Successful AV is enabled. root
2 2007-10-01 16:20:28 ZW35-TW 1001-ZW35-sig v1.457 IDP Successful root
Total Records:2

The following table describes the labels in this screen.

Table 143 Log & Report > Operation Report > Signature Profile Backup & Restore Report > Backup Report

LABEL	DESCRIPTION
Page Size	Select this from the list box to set up how many records you want to see in each page.
#	This is the number of an individual entry.
Action Time	This field displays the date and time the operation was requested. You can click the label to sort by this column.
Device Name	This displays the device name for the signature profile backup. You can click the label to sort by this column.
Profile Name	This displays the backup profile name.

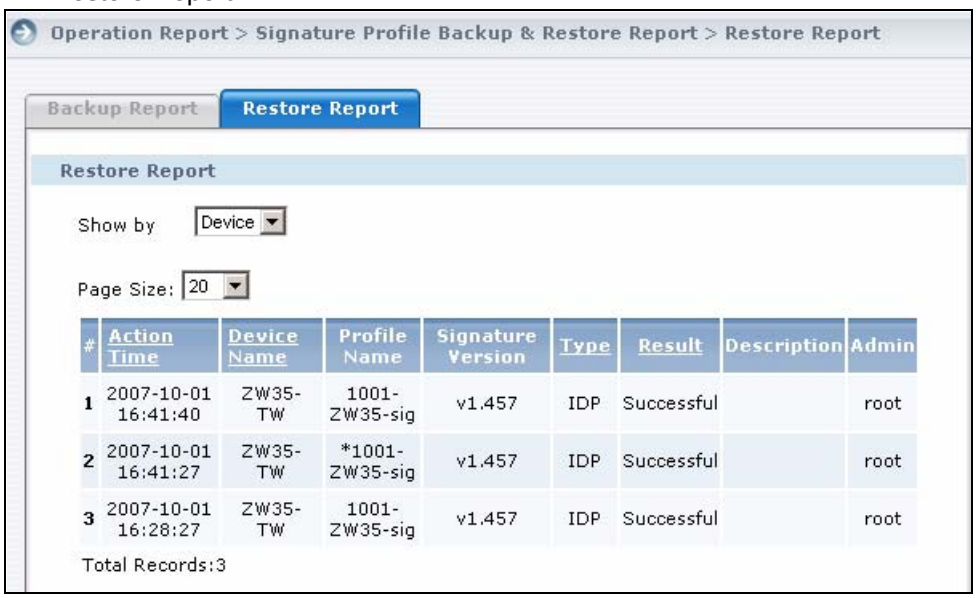
Table 143 Log & Report > Operation Report > Signature Profile Backup & Restore Report > Backup Report (continued)

LABEL	DESCRIPTION
Signature Version	This displays the signature version of the profile the backup was requested.
Type	This displays the signature profile type of the operation. You can click the label to sort by this column.
Result	This displays the result the operation was performed. You can click the label to sort by this column.
Description	This is addional note for this operation entered when this operation was created.
Admin	This field displays the name of the administrator who performed the operation.
Toal Records	This entry displays the total number of records on the current page of the list.

18.6 Signature Profile Restore Report

Use this screen to look at the restore records of device signature profile. Refer to Section 9.5.3 on page 226. To open this screen, click **Log & Report** in the menu bar and then click **Operation Report** > **Signature Profile Backup & Restore Report** > **Restore Report** in the navigation panel.

Figure 165 Log & Report > Operation Report > Signature Profile Backup & Restore Report > Restore Report


Operation Report > Signature Profile Backup & Restore Report > Restore Report
Backup Report
Restore Report
Restore Report
Show by
Device
Page Size:
20
Action Time Device Name Profile Name Signature Version Type Result Description Admin
1 2007-10-01 16:41:40 ZW35-TW 1001-ZW35-sig v1.457 IDP Successful root
2 2007-10-01 16:41:27 ZW35-TW *1001-ZW35-sig v1.457 IDP Successful root
3 2007-10-01 16:28:27 ZW35-TW 1001-ZW35-sig v1.457 IDP Successful root
Total Records:3

The following table describes the labels in this screen.

Table 144 Log & Report > Operation Report > Signature Profile Backup & Restore Report > Restore Report

LABEL	DESCRIPTION
Show by	Select this to display the signature profile restore list shown by devices or by groups.
Page Size	Select this from the list box to set up how many records you want to see in each page.

Table 144 Log & Report > Operation Report > Signature Profile Backup & Restore Report > Restore Report (continued)

LABEL	DESCRIPTION
#	This is the number of an individual entry.
Action Time	This field displays the date and time the operation was requested. You can click the label to sort by this column.
Device Name	This displays the device name for the signature profile restore. You can click the label to sort by this column.
Profile Name	This displays the restore profile name.
Signature Version	This displays the signature version of the profile the restore was requested.
Type	This displays the signature profile type of the operation. You can click the label to sort by this column.
Result	This displays the result the operation was performed. You can click the label to sort by this column.
Description	This is addional note for this operation entered when this operation was created.
Admin	This field displays the name of the administrator who performed the operation.
Toal Records	This entry displays the total number of records on the current page of the list.

19

CNM Logs

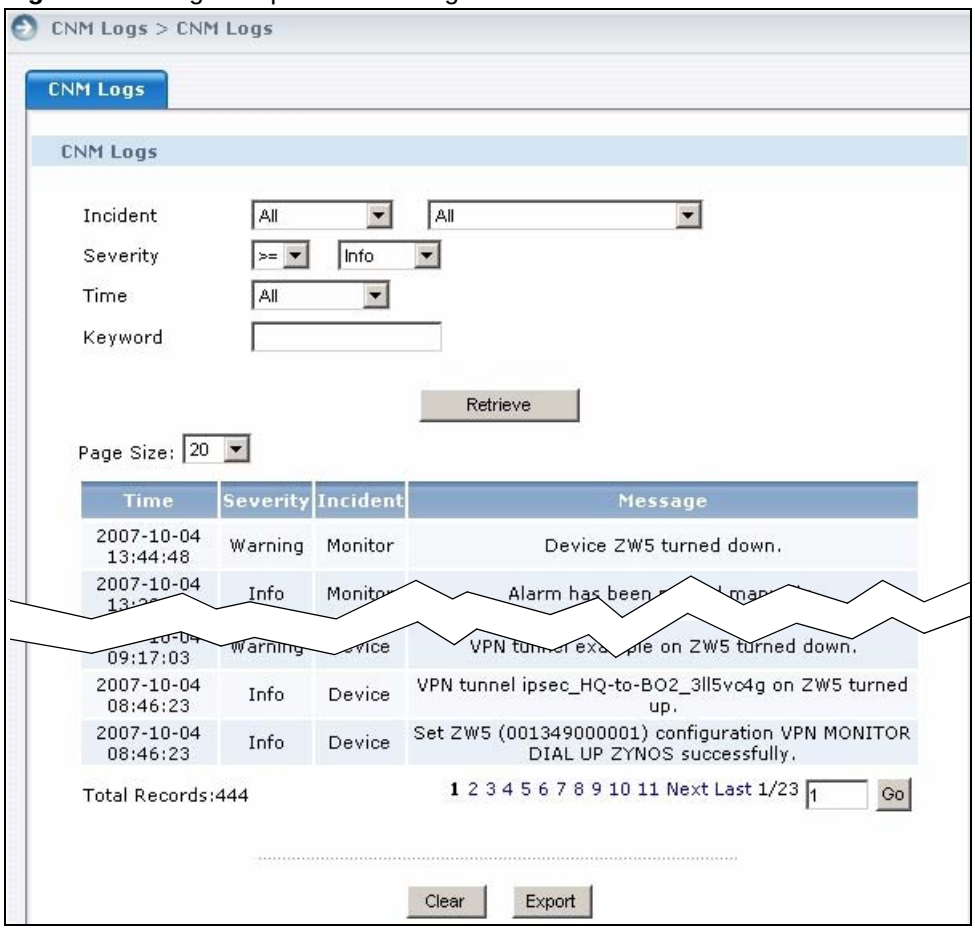
19.1 Vantage CNM Logs

Use these screens to view and configure Vantage CNM system log preferences.

19.1.1 CNM Logs

You can view system logs for previous day, the last two days or up to one week here. To open this screen, click **Log & Report** in the menu bar and then click **CNM Logs** in the navigation panel.

Figure 166 Log & Report > CNM Logs



The following table describes the labels in this screen.

Table 145 LOG & Report > CNM Logs

LABEL	DESCRIPTION
Incident	Select one of the general categories of events whose logs you want to view from the first list box. Select a more specific type of event whose logs you want to view from the second list box.
Severity	The log severity level from high to low are **Error > Warning > Info**. Use >=, =, or <= with a logs type to define the severity level you want to view Vantage CNM logs.
Time	Select the time period for which you want to view Vantage CNM logs
Keyword	Type a keyword of the message you want to view Vantage CNM logs.
Retrieve	Click **Retrieve** for Vantage CNM to pull the logs from the selected device.
Page Size	Select this from the list box to set up how many records you want to see in each page
Time	This field displays the date ane time the Vantage CNM log event occurred.
Severity	The log severity level from high to low are **Error > Warning > Info**. Use >=, =, or <= with a logs type to define the severity level you want to view Vantage CNM logs.
Incident	This field displays the general category of the event.
Message	This field states the reason for the log.
Total Records	This displays how many entries in total display in this list.
Clear	Click this to delete all logs after you double confirm the action.
Export	Click this to export the current information in this screen to a CnmLogStore.csv file.

20

VRPT

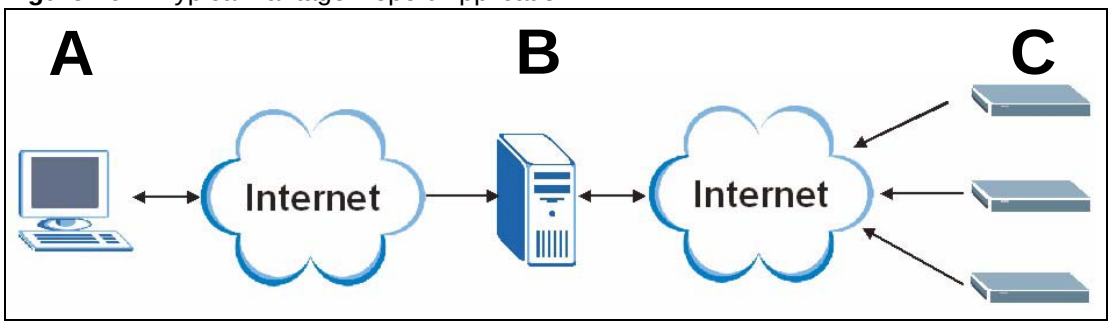
The **Report** menu activates Vantage Report. This chapter introduces Vantage Report and its role in Vantage CNM. Then, it explains how to set up and start Vantage Report. Please refer to the Vantage Report 3.1 User's Guide for more detailed information.

20.1 Vantage Report Overview

This section introduces the standalone version of Vantage Report. See Section 20.2 on page 294 for more information about Vantage Report in Vantage CNM.

Vantage Report allows an administrator in any location to easily manage, monitor and gather statistics on devices located worldwide. With Vantage Report, you can monitor network access, enhance security, and anticipate future bandwidth needs. A typical application is illustrated in the following figure.

Figure 167 Typical Vantage Report Application



In this example, you use the Vantage Report web configurator (**A**) to set up the Vantage Report server (**B**). You also configure the devices (**C**) to send their logs and traffic statistics to the Vantage Report Server. The Vantage Report server collects this information. Then, you can

- Monitor the whole network
- Look at historical reports about network performance and events
- Examine device logs

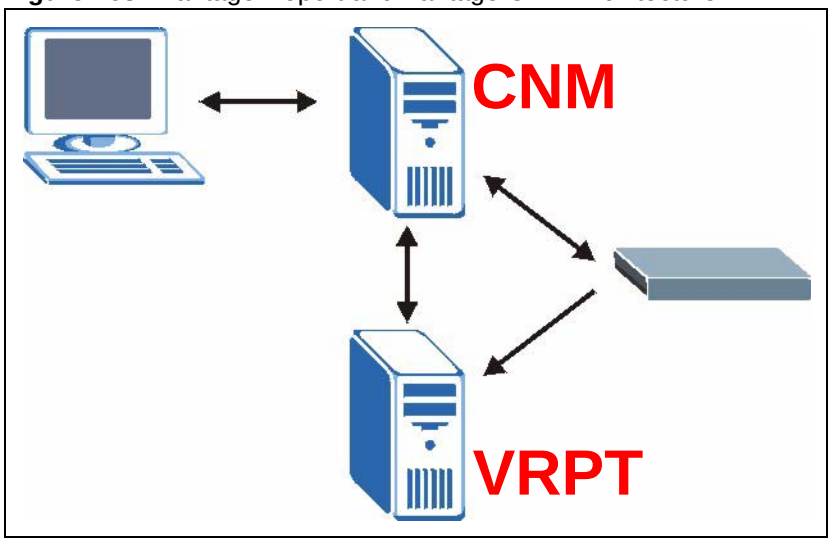
The Vantage Report server can also send statistical reports to you by e-mail.

20.2 Vantage Report in Vantage CNM

Vantage Report in Vantage CNM is a special release for Vantage CNM only. No additional license is required to use it. Vantage Report in Vantage CNM generally supports the capabilities available in the professional version of standalone Vantage Report, including drill-down reports, reverse DNS lookup, web usage by category, anti-virus, anti-spam, and HTML reports by e-mail. See Appendix A on page 341 for additional specifications.

Vantage Report in Vantage CNM does not have a separate web interface, so you have to use Vantage CNM to configure Vantage Report and to look at reports. This is illustrated below.

Figure 168 Vantage Report and Vantage CNM Architecture



The Vantage Report server can be installed on the same machine as Vantage CNM or on a different machine. You can also set up multiple instances of Vantage Report in one instance of Vantage CNM (not shown in Figure 168 on page 294), but every instance of Vantage Report shares the same global configuration, SMTP settings, and list of customized services in Vantage CNM.

20.3 Setting Up Vantage Report in Vantage CNM

Follow these steps to set up each instance of Vantage Report and the devices that use it.

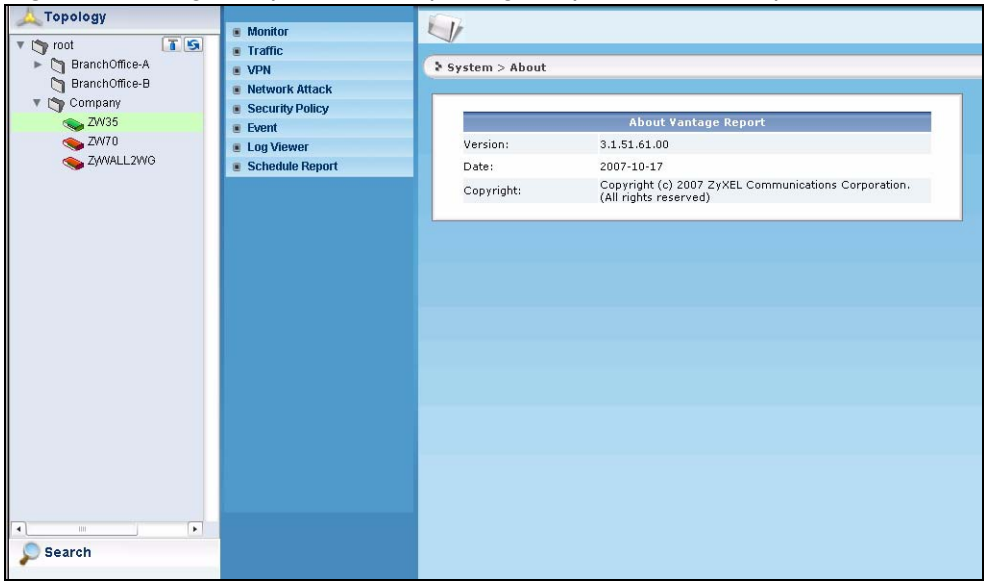
1. Install the Vantage Report server on a Windows or Linux system. The Vantage Report software for Vantage CNM is in the same package as the Vantage CNM software.
2. Click **CNM System Setting** > **VRPT Management** > **Add**. Configure the Vantage Report instance in Vantage CNM, and select the devices that should send log messages to the Vantage Report instance. See Section 21.6 on page 306.

   When you click **Apply**, Vantage CNM automatically configures the selected devices to send log messages to the specified Vantage Report instance. It does not change any settings for log categories or traffic statistics.
3. Click **CNM System Setting** > **Configuration** > **Log Setting** for each device. Make sure the desired log categories are selected and that traffic statistics are sent to the Vantage Report server. Refer to Vantage Report 3.1 User's Guide for more information.

20.4 Opening Vantage Report in Vantage CNM

After you set up a Vantage Report in Vantage CNM (see Section 20.3 on page 294), select a device that is managed by Vantage Report, and click **Log & Report** > **VRPT**. Then you can see the device's relative reports displayed via Vantage Report in the Vantage CNM as shown next.

Figure 169 Log & Report > VRPT (Vantage Report Main Screen)



If the device is not managed by any Vantage Report instance yet, the Vantage Report window does not open, an error message appears to say this device is not associated with the Vantage Report.

PART VI
CNM System Setting

CNM System Setting (299)
Maintenance (313)
Device Owner (315)
Vantage CNM Software Upgrade (317)
License Upgrade (319)
About Vantage CNM (321)

21

CNM System Setting

Use these screens to configure Vantage CNM server settings such as servers configuration, system maintenance, create and define device owner, software upgrade, license management, and about.

21.1 Servers Configuration

You can configure these servers as you install Vantage CNM (in the installation wizard) or after you install it in this screen.

Configure the Vantage CNM public IP server address, FTP server (for firmware upload), and mail server (for Vantage CNM notifications and reports) in this screen. These IP addresses will be the same as the Vantage CNM server computer if they are all on the same computer.

The FTP server is used for file transfers, such as firmware upgrade.

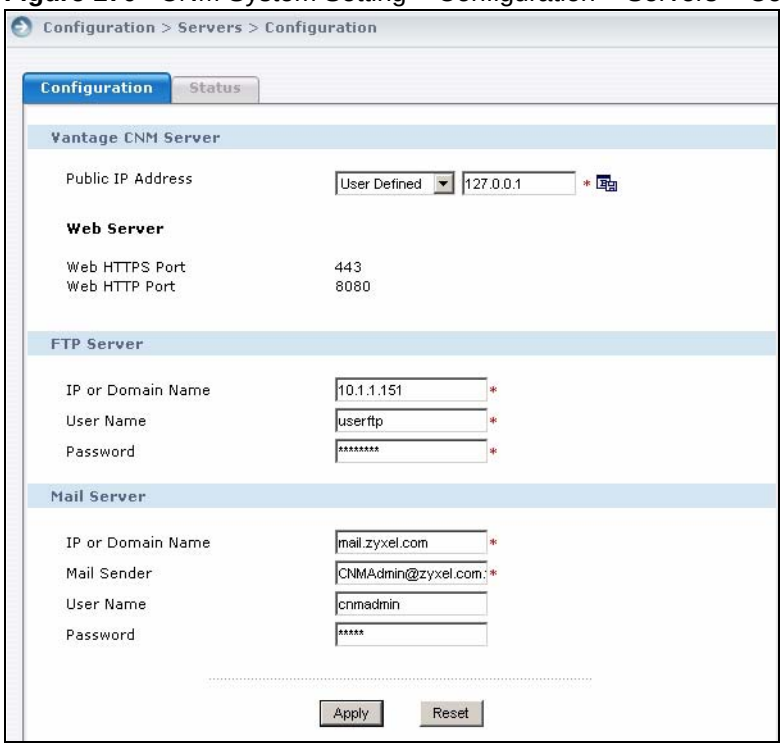
The SMTP server is used for e-mail notifications.

You should know each server's IP address, username and password. File transfers (FTP) and e-mail notifications (SMTP) will not work in Vantage CNM if these are incorrectly configured.

To open this screen, click **CNM System Setting** in the menu bar and then click **Configuration** > **Servers** > **Configuration** in the navigation panel.

Make sure the FTP account's permission includes Files (read/write/delete), Directories (list/create/delete) and Sub-directories (inherit).

Figure 170 CNM System Setting > Configuration > Servers > Configuration



The following table describes the fields in this screen.

Table 146 CNM System Setting > Configuration > Servers > Configuration

LABEL	DESCRIPTION
Vantage CNM Server	
Public IP Address	Select **User Defined** and type the public IP address the Vantage CNM server uses to communicate with managed devices. Or select the IP address which the Vantage CNM server currently uses from the list. See the procedure to change this IP address in the Section 21.1.1 on page 301. Note: Make sure you configure a proper IP address in this field. A wrong IP address may cause inconsistent settings on the Vantage CNM and managed devices.
Web HTTPS Port	This field displays the port number the Vantage CNM server uses for HTTPS communication.
Web HTTP Port	This field displays the port number the Vantage CNM server uses for HTTP communication.
FTP Server	The FTP server is used for file uploads to and from Vantage CNM.
IP or Domain Name	Type the IP address or domain name of the FTP server.
User Name	Type your login name to this FTP server.
Password	Type the FTP server password associated with the login name.
Mail Server	The mail (SMTP) server is used to send Vantage CNM notifications.
IP or Domain Name	Type the IP address or the domain name of the mail server here.
Mail Sender	Type a name to identify the mail server.
User Name	Type your login name to this mail server.

Table 146 CNM System Setting > Configuration > Servers > Configuration

LABEL	DESCRIPTION
Password	Type the mail server password associated with the login name.
Apply	Click **Apply** to save your settings in Vantage CNM.
Reset	Click **Reset** to begin configuring the screen afresh.

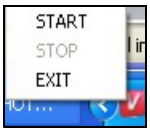
21.1.1 Vantage CNM Server Public IP Address

If you change the Vantage CNM server public IP address, then each (Vantage CNM-registered) device's Manager IP address must change too.

1. Go to the **CNM System Settings** > **Configuration** > **Servers** > **Configuration** screen.
2. Enter the new IP address in the **Public IP Address** field and **Apply**.
3. Change all registered devices' manager IP address to the new IP address, you must access each device's web interface or command line.
   - For ZyNOS ZyWALL, go to **ADVANCED** > **REMOTE MGMT** > **CNM** tab in the web interface. Enter the new Vantage CNM public IP address and then click **Apply**.
   - For ZLD ZyWALL, go to **System** > **Vantage CNM** in the web interface. Enter the new Vantage CNM public IP address and then click **Apply**.
   - For Prestige, go to command line and enter `cnm managerIp x.x.x.x` on the ZyXEL device where `x.x.x.x` is the public IP address of the Vantage CNM server.
4. Restart managed devices or restart Vantage CNM (see 4a and 4b) to reset the communication between Vantage CNM and devices. Wait about 5 minutes until the device is ready and registers with Vantage CNM. You don't have to restart the computer on which Vantage CNM is installed. See how to restart Vantage CNM as following.

   4a Right-click the Vantage CNM icon in the system tray and select **STOP**.

   4b Right-click the icon again and select **START**.

When you register new devices with Vantage CNM, make sure the new device can ping the Vantage CNM server (the new **Vantage CNM Public IP** address) and then set the device's Manager IP address correspondingly.

21.2 Servers Status

Use this screen to view the current Vantage CNM system status. This is a read-only screen. To open this screen, click **CNM System Setting** in the menu bar and then click **Configuration** > **Servers** > **Status** in the navigation panel.

Figure 171 CNM System Setting > Configuration > Servers > Status

The following table describes the fields in this screen.

Table 147 CNM System Setting > Configuration > Servers > Status

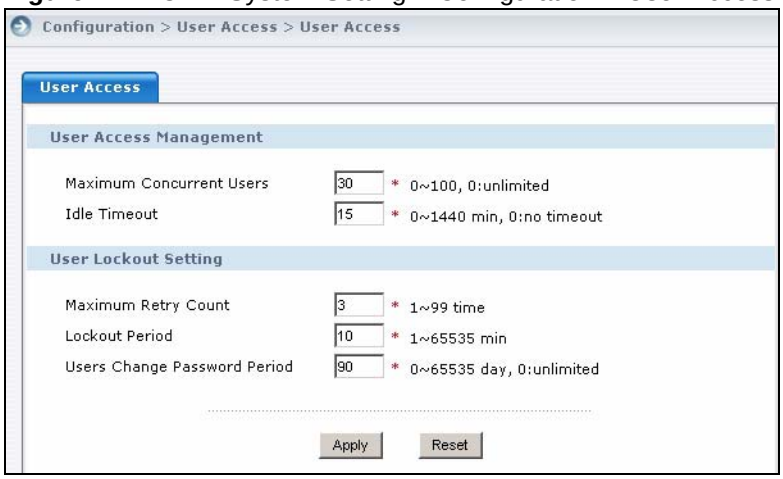
LABEL	DESCRIPTION
Vantage CNM Server public IP	This field displays the IP address of the communications server. If the COM server is on the same computer as Vantage CNM, then this address is the same IP address as that of the Vantage CNM server computer. You can change this value in **CNM System Setting > Configuration > Servers > Configuration**. See Section 21.1 on page 299.
FTP server	This field displays the IP address of the FTP server. You can change this value in **CNM System Setting > Configuration > Servers > Configuration**. See Section 21.1 on page 299. Click **Check** to test if the connection to the server is up.
Mail Server	This field displays the IP address of the Mail Server. You can change this value in **CNM System Setting > Configuration > Servers > Configuration**. See Section 21.1 on page 299. Click **Check** to test if the connection to the server is up.
CPU Usage	This field displays the Vantage CNM server CPU processing power usage. Heavy usage may necessitate upgrading to a more powerful CPU.
Memory Usage(Available/ Total)	This field displays the Vantage CNM server memory usage. Heavy usage may necessitate installing more RAM.
Vantage CNM server disk space available	This field displays the Vantage CNM server computer hard drive free space. Heavy usage may necessitate buying another hard drive or purging old logs and alerts.
Uptime	This field displays how long Vantage CNM has been on since the last start up.
Number of Administrators currently logged in	This field displays the number of Administrators currently logged into Vantage CNM.

21.3 User Access

A User is an administrator. Set the maximum number of administrators allowed to log into Vantage CNM at one time, Vantage CNM idle time-out (so one administrator does not unwittingly hog resources by not logging out) and the user lockout mechanism in this screen.

User lockout is a protection mechanism to discourage brute-force password guessing attacks on a device's management interface. You can specify a lockout period that must expire before entering a fourth password after three incorrect passwords have been entered. You can also force all administrators to periodically change their passwords in this screen. To open this screen, click CNM System Setting in the menu bar and then click Configuration > User Access in the navigation panel.

Figure 172 CNM System Setting > Configuration > User Access



The following table describes the fields in this screen.

Table 148 CNM System Setting > Configuration > User Access

LABEL	DESCRIPTION
Maximum Concurrent Users	Type the maximum number of administrators allowed to log into Vantage CNM at any one time.
Idle Timeout	Select the check box next to this to activate the timeout, and type the length of time an Administrator can leave the Vantage CNM web configurator idle before he is automatically logged out. Clear the check box to disable the timeout.
Maximum Retry Count	Type the number of times an incorrect password may be entered before a login failure is returned.
Lockout Period	Type the wait time before allowing another login in after a login failure is returned.
Users Change Password Period	Type how often all Administrators must change their Vantage CNM login passwords. If an Administrator does not change her password within this time, then the old password expires.
Apply	Click **Apply** to save your settings in Vantage CNM.
Reset	Click **Reset** to begin configuring the screen afresh.

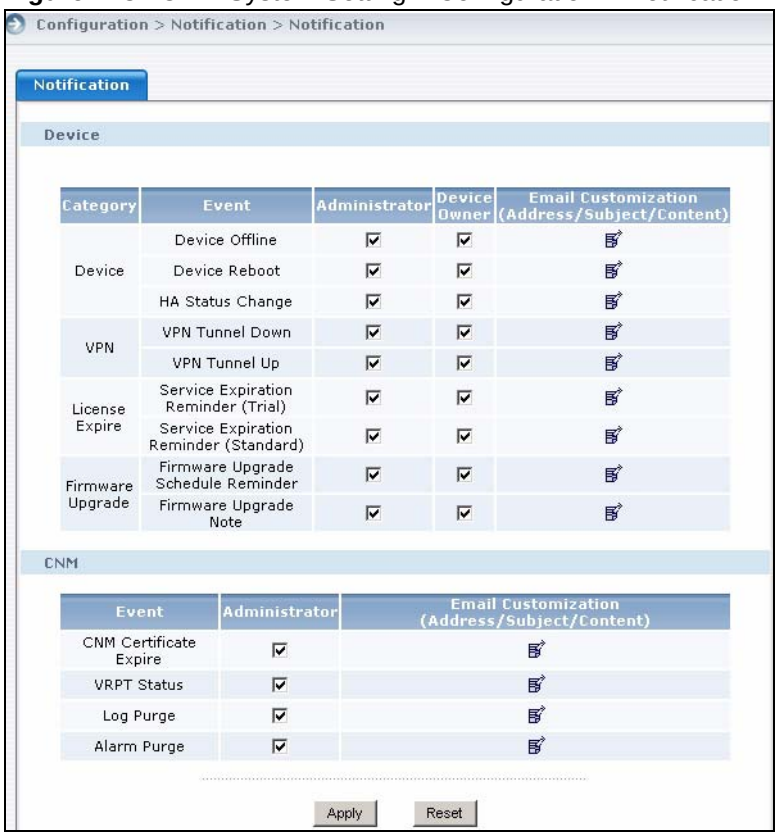
21.4 Notifications

Use this screen to decide who should receive e-mail for events that may warrant immediate attention such as firmware upgrade or device logs and/or alarms. **Device Owner** is a variable that refers to the e-mail address of the device owner (configured in the **Device Owner** screen).

21.4.1 Notifications

Use this screen to decide who should receive e-mail for device and CNM events that may warrant immediate attention such as a VPN tunnel down or a device reboot or a CNM log purge notification. **Device Owner** is a variable that refers to the e-mail address of the device owner (configured in the **Device Owner** screen). To open this screen, click **CNM System Setting** in the menu bar and then click **Configuration** > **Notification** in the navigation panel.

Figure 173 CNM System Setting > Configuration > Notification



The following table describes the fields in this screen.

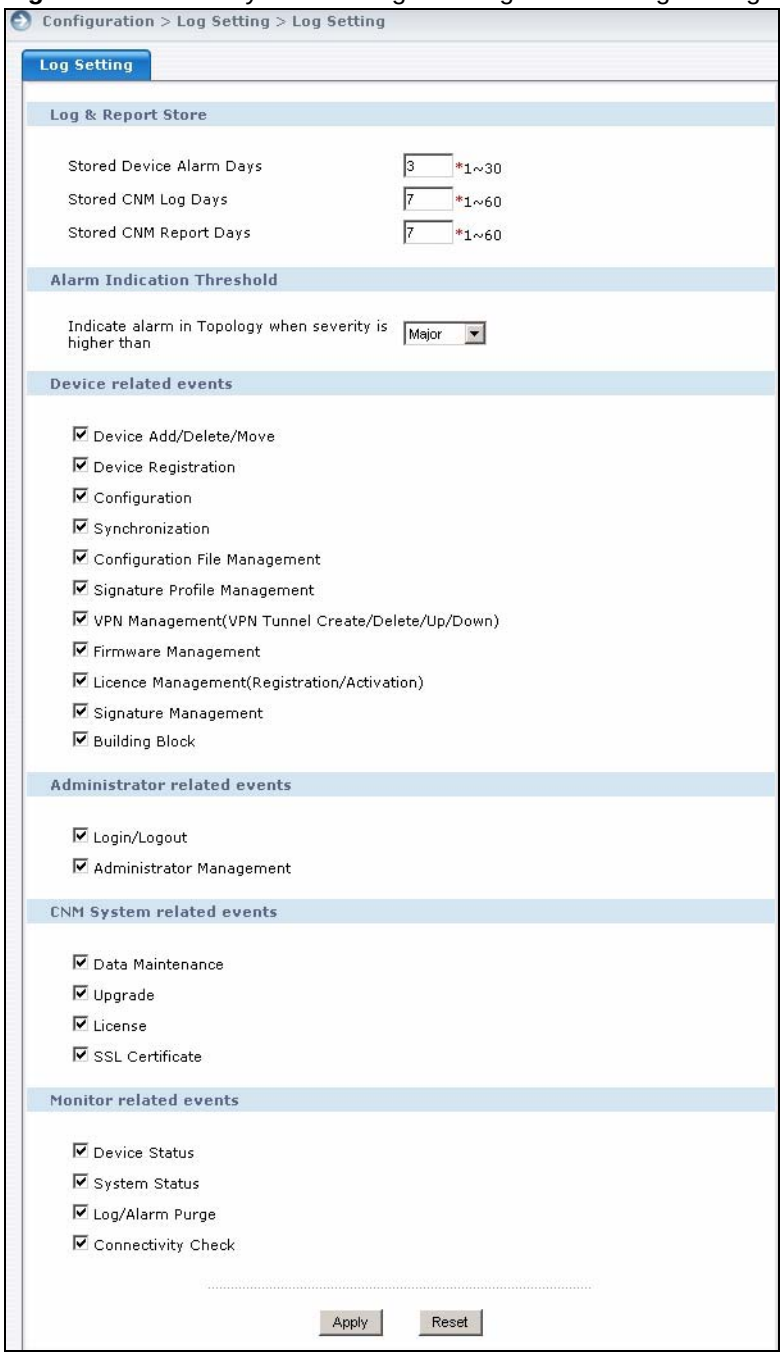
Table 149 CNM System Setting > Configuration > Notification

LABEL	DESCRIPTION
Category	This is the category for device notifications.
Event	This is the event the Vantage CNM generates notifications about.
Administrator	Select to have an e-mail automatically sent to the administrator.
Device Owner	Select to have an e-mail automatically sent to the selected device owner e-mail address (configured in **Device Owner**).
E-mail Customization (Address/Subject/ Content)	Click the edit icon to configure the mail settings such as address, subject and content.
Apply	Click **Apply** to save your settings in Vantage CNM.
Reset	Click **Reset** to begin configuring the screen afresh.

21.5 Log Setting

Use this screen to set how many days the Vantage CNM server keeps the logs, alarms and reports. And to decide a threshold to indicate an alarm when a device's alarm severity is higher than the selected level. You can also select what type of system logs you wish to log as shown in the following screen. To open this screen, click **CNM System Setting** in the menu bar and then click **Configuration** > **Log Setting** in the navigation panel.

Figure 174 CNM System Setting > Configuration > Log Setting



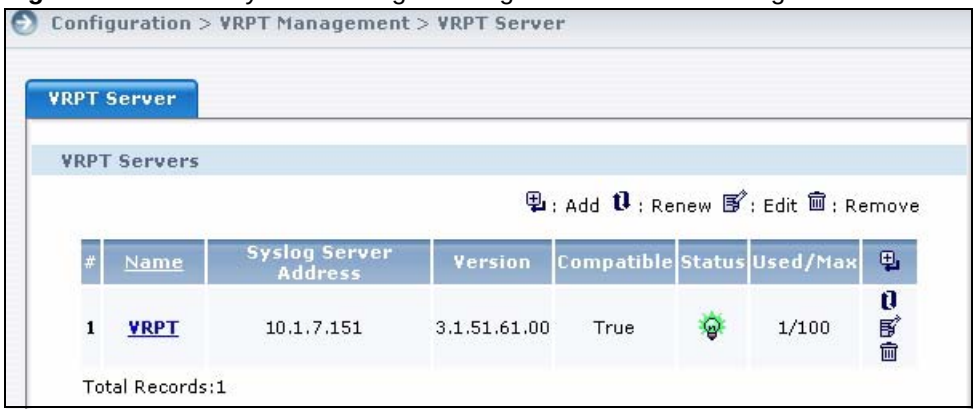
21.6 VRPT Management

Vantage CNM also includes Vantage Report. See Chapter 20 on page 293 for information about Vantage Report in Vantage CNM.

21.6.1 General

Use this screen to manage the Vantage Report instances in Vantage CNM. To open this screen, click **CNM System Setting** in the menu bar and then click **Configuration** > **VRPT Management** in the navigation panel.

Figure 175 CNM System Setting > Configuration > VRPT Management


Configuration > VRPT Management > VRPT Server
VRPT Server
VRPT Servers
: Add : Renew : Edit : Remove
Name Syslog Server Address Version Compatible Status Used/Max
1 VRPT 10.1.7.151 3.1.51.61.00 True 1/100
Total Records:1

The following table describes the labels in this screen.

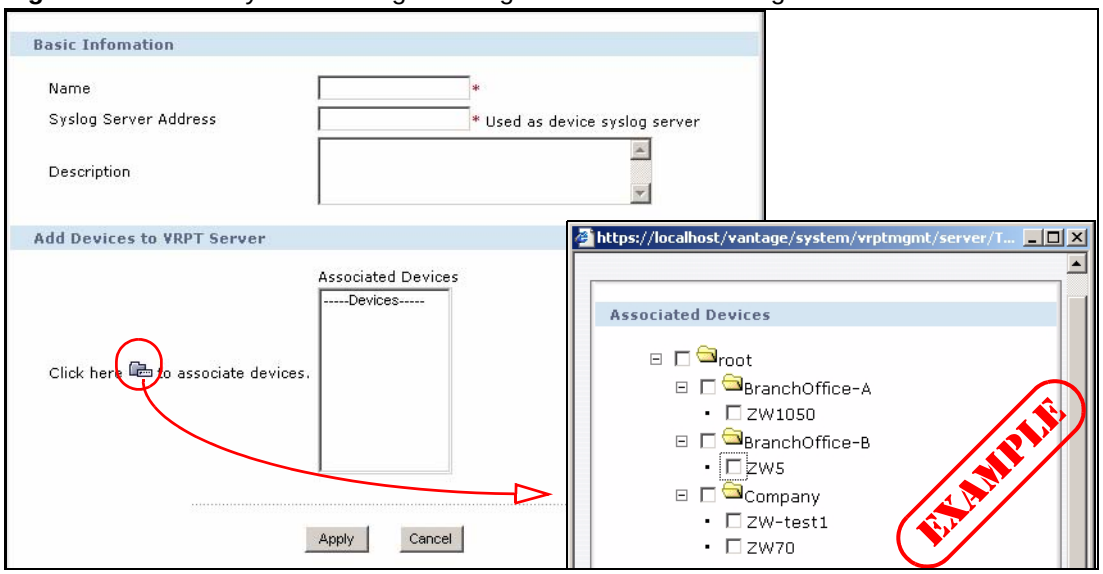
Table 150 CNM System Setting > Configuration > VRPT Management

LABEL	DESCRIPTION
#	This is the number of an individual entry.
Name	This field displays the name of the Vantage Report instance in Vantage CNM. Click the name to test whether the connection is ok.
Syslog Server Address	This field displays the IP address of the Vantage Report instance.
Version	This field displays the software version number of the Vantage Report instance.
Compatible	
Status	This field displays the status of the Vantage Report instance. The bulb lights on when the Vantage CNM is able to connect to the Vantage Report server. Otherwise, the bulb is off.
Used/Max	Click this to look at the number of registered devices in the VRPT server and the maximum registered device number this VRPT server allows to add in.
Add	Click this to set up a new Vantage Report instance in Vantage CNM.
Renew	Click this to get the latest connection status between the Vantage Report instance and the Vantage CNM.
Edit	Click this to edit an existing Vantage Report instance in Vantage CNM.
Remove	Click this to remove one Vantage Report instance.

21.6.2 Add/Edit VRPT Management

Use this screen to configure a VRPT server. To open this screen, click **Add** or **Edit** in the **CNM System Setting** > **Configuration** > **VRPT Management** screen.

Figure 176 CNM System Setting > Configuration > VRPT Management > Add/Edit



The following table describes the labels in this screen.

Table 151 CNM System Setting > Configuration > VRPT Management > Add/Edit

LABEL	DESCRIPTION
Name	Enter a descriptive name of the Vantage Report instance in Vantage CNM. You must use 3-28 alphanumeric characters, underscores (_), dashes (-), or periods (.).
Syslog Server Address	Enter the IP address of the Vantage Report server.
Description	Type a description, if desired, for the Vantage Report instance. You can use up to 255 printable ASCII characters.
Add Devices to VRPT Server	Click the icon and the associated devices screen appears where you can select associated device(s) to this VRPT server. Click **Add** to return to the previous screen and the selected device(s) display in the **Associated Devices** field. When you click **Apply**, Vantage CNM automatically configures these devices to send log messages to this Vantage Report. It does not change any settings for log categories or traffic statistics, so you might have to change these manually. See Table 225 on page 414. To unassociate a device to the VRPT server, click the icon and unselect the associated device from the list. Then click **Add**. When you click **Apply**, Vantage CNM automatically resets the syslog settings to their default values for devices that previously used the specified Vantage Report server. It does not change any settings for log categories or traffic statistics.
Apply	Click **Apply** to save these changes.
Cancel	Click **Cancel** to return to the previous screen without saving changes.

21.7 Certificate Management Overview

Some devices can provide certificates (also called digital IDs) for users to authenticate the device. Certificates are based on public-private key pairs. A certificate contains the certificate owner's identity and public key. Certificates provide a way to exchange public keys for use in authentication.

A Certification Authority (CA) issues certificates and guarantees the identity of each certificate owner. There are commercial certification authorities like CyberTrust or VeriSign and government certification authorities. You can use the device to generate certification requests that contain identifying information and public keys and then send the certification requests to a certification authority.

In public-key encryption and decryption, each host has two keys. One key is public and can be made openly available; the other key is private and must be kept secure. Public-key encryption in general works as follows.

1. Tim wants to send a private message to Jenny. Tim generates a public key pair. What is encrypted with one key can only be decrypted using the other.
2. Tim keeps the private key and makes the public key openly available.
3. Tim uses his private key to encrypt the message and sends it to Jenny.
4. Jenny receives the message and uses Tim's public key to decrypt it.
5. Additionally, Jenny uses her own private key to encrypt a message and Tim uses Jenny's public key to decrypt the message.

The device uses certificates based on public-key cryptology to authenticate users attempting to establish a connection, not to encrypt the data that you send after establishing a connection. The method used to secure the data that you send through an established connection depends on the type of connection. For example, a VPN tunnel might use the triple DES encryption algorithm.

The certification authority uses its private key to sign certificates. Anyone can then use the certification authority's public key to verify the certificates.

A certification path is the hierarchy of certification authority certificates that validate a certificate. The device does not trust a certificate if any certificate on its path has expired or been revoked.

Certification authorities maintain directory servers with databases of valid and revoked certificates. A directory of certificates that have been revoked before the scheduled expiration is called a CRL (Certificate Revocation List). The device can check a peer's certificate against a directory server's list of revoked certificates. The framework of servers, software, procedures and policies that handles keys is called PKI (public-key infrastructure).

21.7.1 Advantages of Certificates

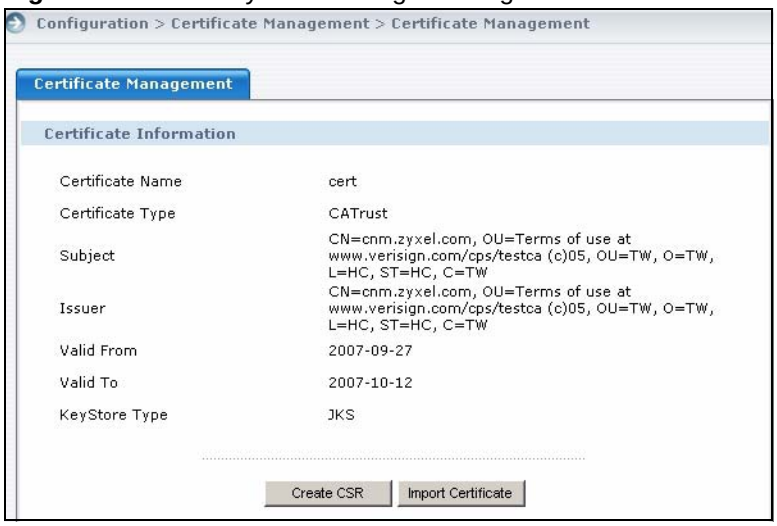
The device only has to store the certificates of the certification authorities that you decide to trust, no matter how many devices you need to authenticate.

Key distribution is simple and very secure since you can freely distribute public keys and you never need to transmit private keys.

21.7.2 Current Certificate Information

You can view your current certificate information in this screen, including certificate name, type, origin and duration of validity.

Figure 177 CNM System Setting > Configuration > Certificate Management



The following table describes the labels in this screen.

Table 152 CNM System Setting > Configuration > Certificate Management

LABEL	DESCRIPTION
Certificate Name	This field displays the name used to identify this certificate. It is recommended that you give each certificate a unique name.
Certificate Type	This field displays what kind of certificate this is. **REQ** represents a certification request and is not yet a valid certificate. Send a certification request to a certification authority, which then issues a certificate. Use the **My Certificate** Import screen to import the certificate and replace the request. **SELF** represents a self-signed certificate. ***SELF** represents the default self-signed certificate, which the device uses to sign imported trusted remote host certificates. **CERT** represents a certificate issued by a certification authority.
Subject	This field displays identifying information about the certificate's owner, such as CN (Common Name), OU (Organizational Unit or department), O (Organization or company) and C (Country). It is recommended that each certificate have unique subject information.
Issuer	This field displays identifying information about the certificate's issuing certification authority, such as a common name, organizational unit or department, organization or company and country. With self-signed certificates, this is the same information as in the **Subject** field.
Valid From	This field displays the date that the certificate becomes applicable. The text displays in red and includes a "Not Yet Valid!" message if the certificate has not yet become applicable.
Valid To	This field displays the date that the certificate expires. The text displays in red and includes an "Expiring!" or "Expired!" message if the certificate is about to expire or has already expired.
KeyStore Type	This field specifies the format of the certificate. Possible formats include PKCS #12 (**pkcs12**) and Java Key Store (**jks**)

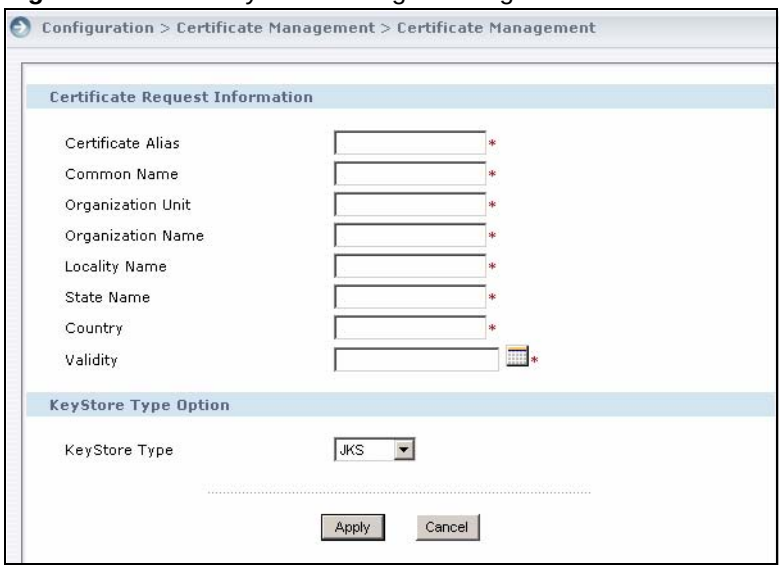
Table 152 CNM System Setting > Configuration > Certificate Management (continued)

LABEL	DESCRIPTION
Create CSR	Click **Create CSR** to create a certificate.
Import Certificate	Click **Import Certificate** to go to the Import Certificate screen.

21.7.3 Create CSR

You can create certificates by entering the requested information into the fields below. Then click **Apply**.

Figure 178 CNM System Setting > Configuration > Certificate Management > Create CSR



The following table describes the labels in this screen.

Table 153 Cnm system Setting > Configuration > Certificate Management > Create CSR

LABEL	DESCRIPTION
Certificate Alias	Type a name to identify the certificate. You can use 1-32 alphanumeric characters, underscores (_), or dashes (-).
Common Name	Type the IP address or domain name used to identify the certificate's owner. You can use 1-32 printable ASCII characters. Spaces are not allowed.
Organization Unit	Type the organization unit (for example, department or division) in this field. You can use 1-32 alphanumeric characters, underscores (_), or dashes (-).
Organization Name	Type the name of the organization or company in this field. You can use 1-32 alphanumeric characters, underscores (_), or dashes (-).
Locality Name	Type the location (for example, city or town) of the organization or company; number, street etc. You can use 1-32 alphanumeric characters, underscores (_), or dashes (-).
State Name	Type the state or province where the organization or company is located. You can use 1-32 alphanumeric characters, underscores (_), or dashes (-).
Country	Type the country code where the organization or company is located. The country must be two letters long.

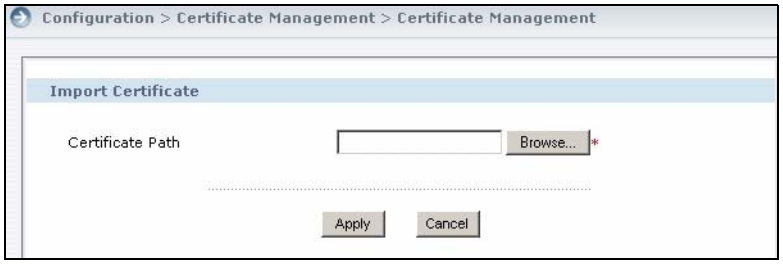
Table 153 Cnm system Setting > Configuration > Certificate Management > Create CSR

LABEL	DESCRIPTION
Validity	Type the date the certificate expires. This date cannot be in the past, and it cannot be more than fifty years from the current date. Use the specified format.
KeyStore Type	Select what type of keystore file to use. Choices are PKCS #12 (**PKCS12**) and Java Key Store (**JKS**). PKCS #12 is a common standard for X.509 certificates. Java Key Store may be used by standalone Java clients using SSL communication or WebLogic Server.
Apply	Click **Apply** to save these changes.
Cancel	Click **Cancel** to return to the previous screen without saving any changes.

21.7.4 Import Certificate

In this screen, you can **Browse** for a certificate that has already been downloaded to your computer. Select **Apply** to complete the certificate import.

Figure 179 CNM System Setting > Configuration > Certificate Management > Import Certificate



The following table describes the labels in this screen.

Table 154 CNM System Setting > Configuration > Certificate Management > Import Certificate

LABEL	DESCRIPTION
Input Certificate	
Input Your Certificate Path	Type in the location of the certificate you want to upload in this field or click **Browse** ... to find it.
Back	Click **Back** to return to the previous screen.
Apply	Click **Apply** to save these changes.

22

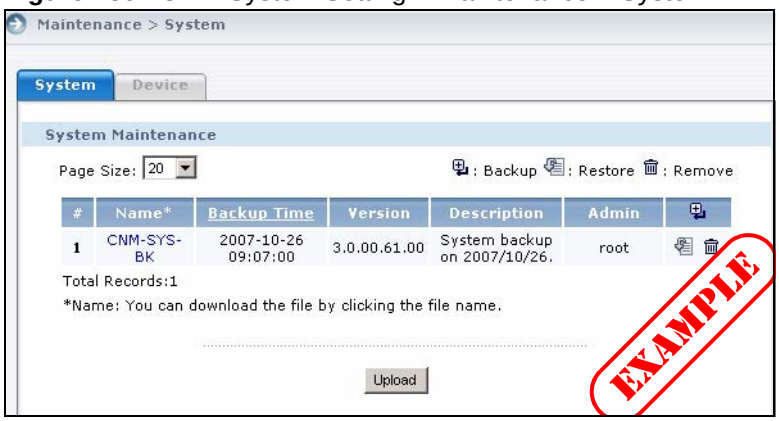
Maintenance

Use the **Maintenance** screens to manage, back up and restore Vantage CNM system backup files. Data maintenance includes device firmware and configuration files you have uploaded to the Vantage CNM server. You can back up or restore to your computer or Vantage CNM. You can choose what domain to back up by selecting a folder in the object tree.

22.1 System Maintenance

Use this screen to delete previous (old) system backups.

Figure 180 CNM System Setting > Maintenance > System


Maintenance > System
System
Device
System Maintenance
Page Size: 20
: Backup : Restore : Remove
Name* Backup Time Version Description Admin
1 CNM-SYS-BK 2007-10-26 09:07:00 3.0.00.61.00 System backup on 2007/10/26. root
Total Records:1
*Name: You can download the file by clicking the file name.
Upload
EXAMPLE

The following table describes the fields in this screen.

Table 155 CNM System Setting > Maintenance > System

LABEL	DESCRIPTION
#	This is the number of an individual entry.
Name	This field displays the system backup file name. You can click a file name to download the file from the Vantage CNM to your computer.
Backup Time	This field displays the date and time the system backup file was created.
Version	This field displays the Vantage CNM software version number when the system backup file was created.
Description	This field displays some extra description of the system backup file.
Admin	This field displays who created the system backup file.
Backup	Click this to create a system backup file.

Table 155 CNM System Setting > Maintenance > System (continued)

LABEL	DESCRIPTION
Restore	Click this to restore a system backup file. Note: System will kick out all on-line users before restoring a system backup file. After restoring, Vantage CNM shuts down automatically. Then you have to restart the Vantage CNM manually.
Remove	Click this to delete a backup file from the Vantage CNM.
Upload	Click this to upload a Vantage CNM system backup file from your computer to the Vantage CNM.

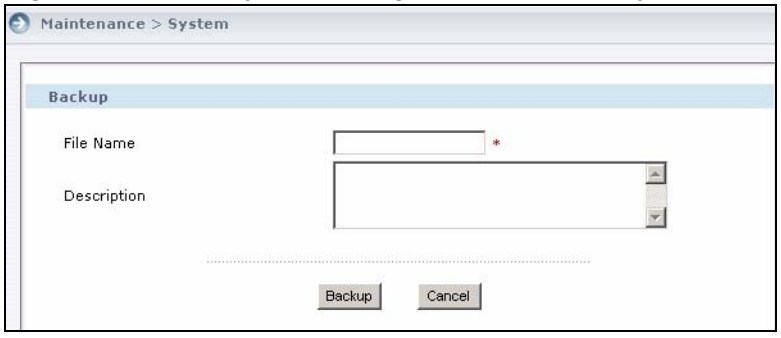
22.1.1 Backup

Use this screen to save your current Vantage CNM system to the Vantage CNM server or your computer. You can enter extra information on the file in the **Description** text box.

Backup configuration allows you to back up (save) the current configuration to a file on the Vantage CNM server. Once your device is configured and functioning properly, it is highly recommended that you back up your configuration file before making configuration changes. The backup configuration file will be useful in case you need to return to your previous settings. You should perform system backup before you upgrade Vantage CNM software.

System kicks out all on-line users after you confirm a system backup. Choose a proper time and inform users the schedule before a system backup.

Figure 181 CNM System Setting > Maintenance > System > Backup



The following table describes the fields in this screen.

Table 156 CNM System Setting > Maintenance > System > Backup

LABEL	DESCRIPTION
File Name	Type up to 35 alphanumberic charactors for this backup file name. Space is not allowed.
Description	Type up to 255 charactors for the file backup description.
Backup	Click this button to perform the file backup.
Cancel	Click this to return to the previous screen without saving any changes.

23

Device Owner

This screen list the address book which is a list of personal details of people of device owners. You can add, edit or remove a device owner in this screen. To associate a device owner with a device, select the person's name in the **Device Owner** field when you add or edit a device (via right clicking your mouse) in the device window. Click **CNM System Setting** in the menu bar and then click **Device Owner** in the navigation panel to display the next screen.

Figure 182 CNM System Setting > Device Owner

The following table describes the labels in this screen.

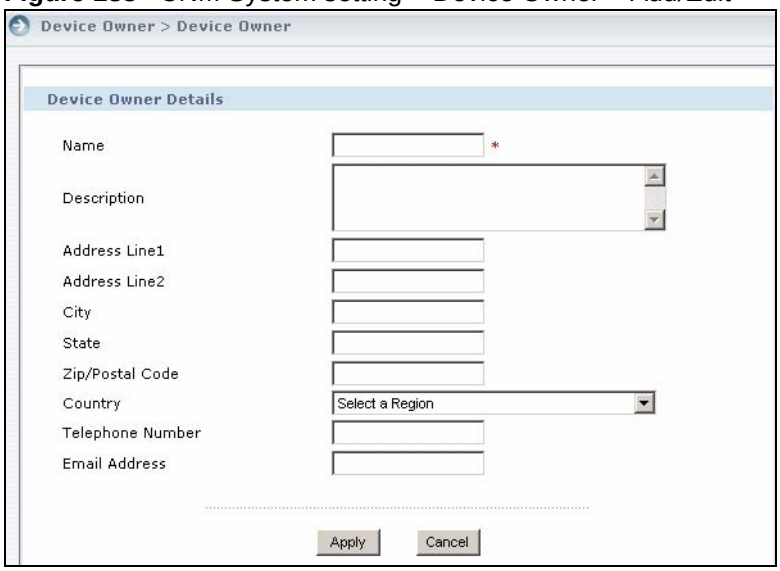
Table 157 CNM System Setting > Device Owner

LABEL	DESCRIPTION
#	This is the number of an individual entry.
Name	This field displays the person's name.
E-Mail	This field displays the person's e-mail address.
Description	This field displays some extra information about the person.
Add	Click this to create a new device owner.
Edit	Click this to modify a device owner's information.
Remove	Click this to remove a device owner from the Vantage CNM server.

23.0.1 Add/Edit a Device Owner

Use this screen to add or edit an entry in the address book. To open this screen, click **Add** to create a new entry or click **Edit** to modify an existing entry on the **Device Owner** screen.

Figure 183 CNM System setting > Device Owner > Add/Edit



The following table describes the labels in this screen.

Table 158 CNM System setting > Device Owner > Add/Edit

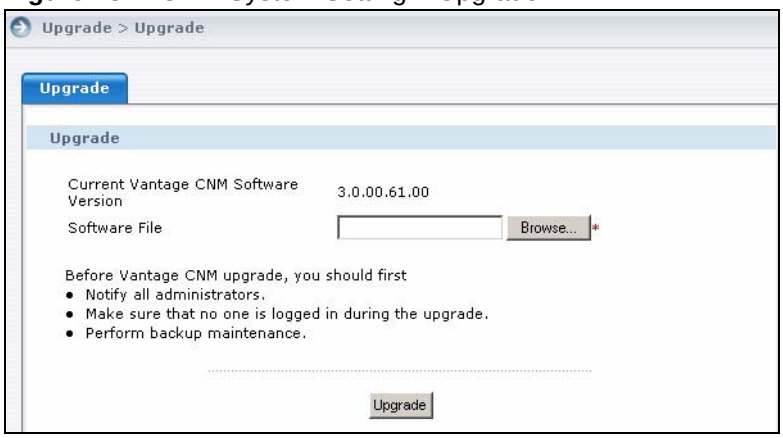
LABEL	DESCRIPTION
Name	Type the person's name.
Description	Type some extra information about the person.
Address Line1	Type up to 64 charactors of a mailing address for this person.
Address Line2	Type the additional address information if the **Address Line1** field is not long enough for the whole mailling address.
City	Type the city name where this person is located.
State	Type the state name where this person is located.
Zip/Postal Code	Type a postal code number for the mailing address.
Country	Select the country where this person is located.
Telephone Number	Type the complete telephone number including area codes for this person.
E-mail	Type the person's e-mail address.
Apply	Click **Apply** to create a new address book record.
Cancel	Click **Cancel** to return to the previous screen.

24

Vantage CNM Software Upgrade

Use this screen to view the current Vantage CNM software version or perform a software upgrade. To open this screen, click **CNM System Setting** in the menu bar and then click **Upgrade** in the navigation panel.

Figure 184 CNM System Setting > Upgrade



25

License Upgrade

Use this screen to renew a standard license key to continuely use Vantage CNM after the trial period or the old license key expires.

Click **CNM System Setting** in the menu bar and then click **License** in the navigation panel to display the next screen.

Figure 185 CNM System Setting > License

The following table describes the fields in this screen.

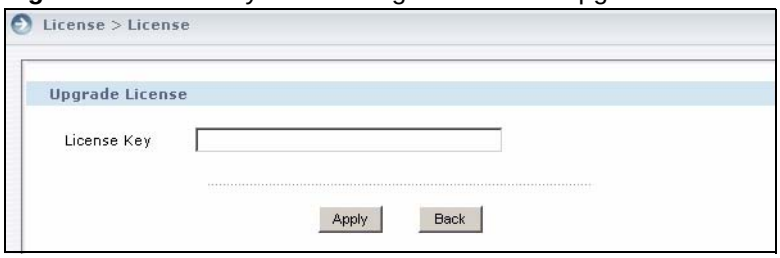
Table 159 CNM System Setting > License

LABEL	DESCRIPTION
License Type	This field displays if the Vantage CNM is in the trial period (Trial) or in the licensed period (Standard).
Account on myZyXEL.com	This is the account you used to register the Vantage CNM.
Authenitcation Code (AC)	This is an automatically generated code after you have installed Vantage CNM on the computer.
Managed/Maximum devices	This field displays the number of device the Vantage CNM currently manages and the maximum device number the Vantage CNM is allowed to manage. Note: To increase the maximum managed device number, you have to buy an additional license key and click the **Upgrade** button to proceed the license upgrade.
Refresh	Click this to force this screen afresh and get the latest license status.
Upgrade	Click **Upgrade** to proceed to the next screen.

25.0.1 License Upgrade

License key is a licence to manage a specific number of ZyXEL devices. It can be found in the iCard. Type a license key to the **License Key** field and click **Apply** to increase the maximum device number the Vantage CNM is allowed to manage. Click **Upgrade** in the **CNM System Setting** > **License** screen to display this screen.

Figure 186 CNM System Setting > License > Upgrade

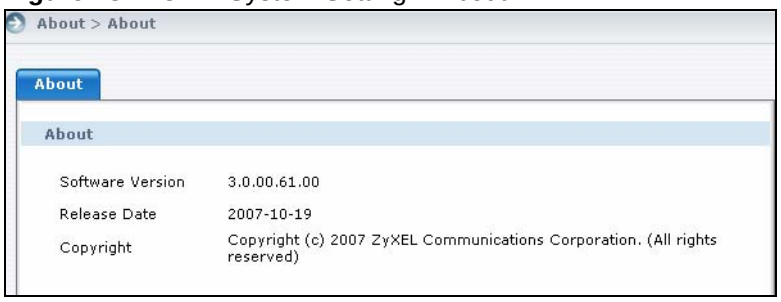


26

About Vantage CNM

Use this screen to see Vantage CNM's software version, release date and the copyright. To open this screen, click **CNM System Setting** in the menu bar and then click **About** in the navigation panel.

Figure 187 CNM System Setting > About



PART VII
Account Management

Group (325)
Account (329)

27

Group

Use these screens to manage Vantage CNM user groups. A group is associated with the privilege you defined and it is for one management domain. After you create a group, you can associate the user(s) with this group before the user(s) can perform any functions in Vantage CNM.

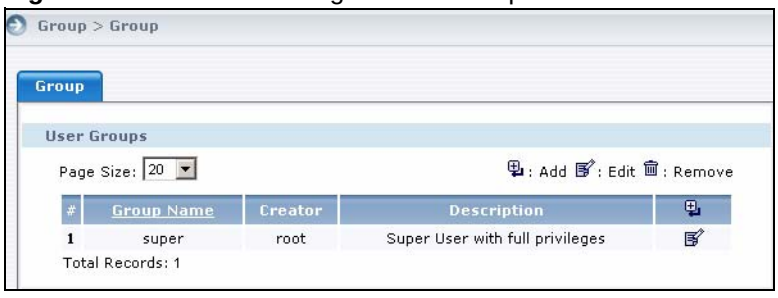
The user is an administrator who uses one user account to login the Vantage CNM and perform tasks in Vantage CNM.

27.1 User Groups

A “user group” is a pre-defined set of administrator permissions. **Super** pre-defined permissions are not editable. Custom administrators have no predefined permissions. To open this screen, click **Account Management** in the menu bar and then click **Group** in the navigation panel.

Administrators should periodically change their passwords.

Figure 188 Account Management > Group



The following table describes the fields in this screen.

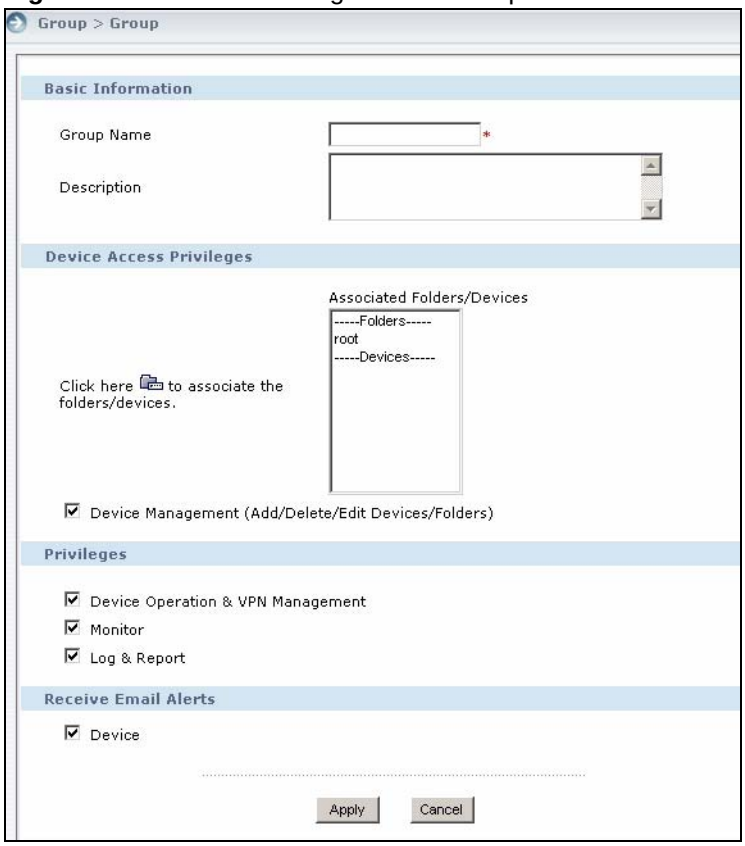
Table 160 Account Management > Group

LABEL	DESCRIPTION
#	This is the number of an individual entry.
Group Name	This field displays the group name.
Creator	This field displays the user name who created the group.
Description	This is the description for the group.
Add	Click this to create a new group.
Edit	Click this to modify an existing group.
Remove	Click this to delete a group. Note: You cannot remove the **Super** group.

27.1.1 Add User Group

Use this screen to create or edit a "user group" (administrator permission template). To open this screen, click **Add** or **Edit** in the **Account Management** > **Group** screen.

Figure 189 Account Management > Group > Add



The following table describes the fields in this screen.

Table 161 Account Management > Group > Add

LABEL	DESCRIPTION
Basic Information	
Group Name	Type a group name for this temperlate.
Description	Type the description for the group.
Device Access Privileges	Click the icon and the associated devices screen appears where you can select associated device(s) this user group is allowed to access to. Click **Add** to return to the previous screen and the selected device(s) display in the **Associated Folders/Devices** field. To unassociate a device to the VRPT server, click the icon and unselect the associated device from the list. Then click **Add**.
Device Management (Add/ Delete/Edit Devices/Folders)	Select this to allow this group adding, deleting, editing the selected devices and folders.
Privileges	
Device Operation & VPN Management	Select this to allow the administrator to access the functions associated to the **Device Operation** and **VPN Management** menus in the menu bar.
Monitor	Select this to allow the administrator to access the functions associated to the **Monitor** menu in the menu bar.
Log & Report	Select this to allow the administrator to access the functions associated to the **Log & Report** menu in the menu bar.
CNM System Setting	Select this to allow the administrator to access the functions associated to the **CNM System Setting** menu in the menu bar. Only **Super** can do this option.
Account Management	Select this to allow the administrator to access the functions associated to the **Account Management** menu in the menu bar.
Receive Email Alerts	
Device	Select this to allow the administrator to receive mails about device alerts. Note: It is recommended to select this for administrators (not for device owners) to receive device alerts by mail.
CNM	Select this to allow the administrator to receive mails about Vantage CNM alerts. Only **Super** can do this option.
Apply	Click **Apply** to save your settings in Vantage CNM.
Cancel	Click **Cancel** to begin configuring the screen afresh.

28

Account

An account is a user with permissions inherited from the associated group. “Root” is the predefined administrator belonging to the **Super** group. Only “root” or any accounts belonging to **Super** group can do everything including managing the Vantage CNM system. Custom administrators have no predefined permissions.

Administrators should periodically change their passwords. The “root” Administrator can also enforce periodic Administrator password changes in the **Users Change Password Period** field in the **CNM System Setting** > **User Access** screen.

28.0.1 “Root” Administrator

The default system name (and password) when you first log in is “root”. This is a default system Administrator account, which cannot be deleted by anyone from the system. root’s details are viewable by others, but not editable.

1. Only one root administrator can exist.
2. Only root can change his/her own personal information except for UID (User Identification).
3. Only “root” can see all other Administrators. Other Administrators can only see Administrators within their domain.

28.0.2 “Super” Administrators

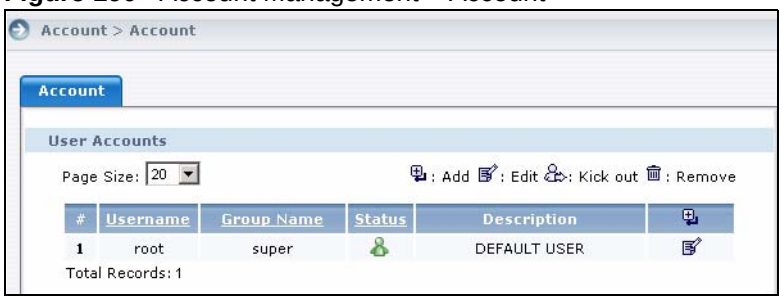
“Super” Administrators are Administrators created using the “Super” User Group. They are the next most powerful type Administrator next to “root”.

1. Super users have all permissions except CNM System Setting.
2. Super permissions are pre-defined in Vantage CNM and are not editable by Vantage CNM Administrators.
3. A “super” Administrator cannot edit any Vantage CNM system settings, but can view (read only) Vantage CNM system status and Vantage CNM logs (but cannot purge or change log options).
4. “Super” Administrators at same management level can't disassociate each other from that management level.

28.1 User Account

Use this screen to display a list of all administrators and root. To open this screen, click **Account Management** in the menu bar and then click **Account** in the navigation panel.

Figure 190 Account Management > Account


Account > Account
Account
User Accounts
Page Size: 20
: Add : Edit : Kick out : Remove
Username Group Name Status Description
1 root super DEFAULT USER
Total Records: 1

The following table describes the fields in this screen.

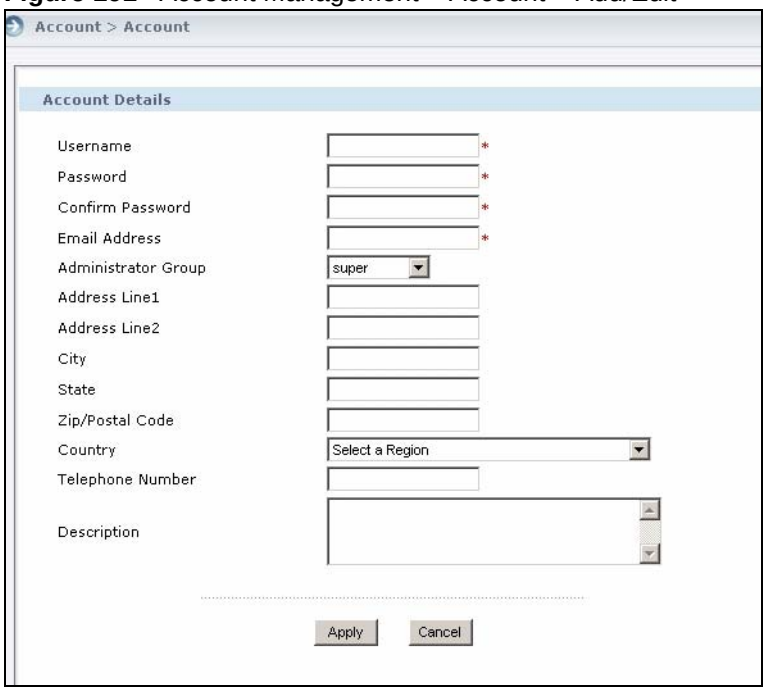
Table 162 Account Management > Account

LABEL	DESCRIPTION
#	This is the number of an individual entry.
Username	This is the administrator name for identification purposes.
Group Name	This is the group name the user belongs to.
Status	This field displays if this Administrator is currently logged in or not.
Description	This field displays extra information on this Administrator.
Add	Click **Add** to create a new Administrator if you have this permission. Only the “root” Administrator and “Super” Administrators can create (and manage) other Administrators within their domains.
Edit	Click this to modify an existing Administrator.
Kick out	Click this to disconnect an on-line user.
Remove	Click this to erase that Administrator account from Vantage CNM. You cannot delete an Administrator who is logged in or who has “child” Administrators.

28.2 Add/Edit an Administrator Account

Click **Add** in the **Account Management** > **Account** screen to create a new Administrator account or click **Edit** to modify an existing Administrator account. Use this screen to edit the password, contact information or define the group for an Administrator. Administrators can edit their own password and contact information but not permissions.

Figure 191 Account Management > Account > Add/Edit



The following table describes the fields in this screen.

Table 163 Account Management > Account > Add/Edit

LABEL	DESCRIPTION
Username	Type the administrator login name associated with the password that you log into Vantage CNM with. The username cannot be changed after an Administrator account is created but her name can be.
Password	Type a password associated with the **Username** above.
Confirm Password	Type the same password again here to make sure that the one you typed above was typed as intended.
E-mail Address	Type a valid e-mail address for this Administrator.
Administration Group	Select the group for this Administrator belongs to.
Address Line1	Type up to 64 charactors of a mailing address for this person.
Address Line2	Type the additional address information if the **Address Line1** field is not long enough for the whole mailling address.
City	Type the city name for this Administrator.
State	Type the state name for this Administrator.
Zip/Postal Code	Type a postal code number for the mailing address to this Administrator.
Country	Select the country where this person is located.
Telephone Number	Type the complete telephone number including area codes for this Administrator.
Description	Type some extra information about the Administrator.
Apply	Click **Apply** to save your settings in Vantage CNM.
Cancel	Click **Cancel** to go back to the previous screen without saving any changes.

PART VIII
Troubleshooting

Troubleshooting (335)

29

Troubleshooting

This chapter offers some suggestions to solve problems you might encounter. The potential problems are divided into the following categories.

- Vantage CNM Access and Login
- Vantage Report

29.1 Vantage CNM Access and Login

See the Quick Start Guide for additional suggestions.

I cannot see or access the **Login** screen in the web configurator.

1. Make sure your Internet browser does not block pop-up windows and has Java Scripts and Java enabled. See Appendix C on page 361.
2. Make sure you are using the correct IP address.
3. If the problem continues, contact your local vendor.

I forgot the **root** password.

The default password is **root**. If you have changed it, contact your local vendor.

I can see the **Login** screen, but I cannot log in to the Vantage CNM.

Make sure you have entered the user name and password correctly. The user name and password are case-sensitive, so make sure [Caps Lock] is not on. If this does not work, contact the network administrator or local vendor.

29.2 Device Management

One device always keeps in On_Pending status in the device window. How can I do?

A device in the On_Pending status means there are some pending tasks the Vantage CNM should set but has not been set on the device. If the device keeps in the status for a long time (for example, over 30 minutes), this may cause the inconsistency between the Vantage CNM and the device. Try to do the following.

1. Refresh the device window to get the latest device status. Make sure the connection between the device and the Vantage CNM is ok.
2. Make sure the Vantage CNM's public IP address is properly configured. (For example, you can not use 127.0.0.1.). And this IP address should match the one configured in the managed devices. If you need to change the Vantage CNM's public IP address, you have to restart the managed devices or Vantage CNM server to reset the connections. See the procedure to change this IP address in the Section 21.1.1 on page 301.
3. Device firmware backup/restore or configuration file backup/restore on the Vantage CNM has upload/download files on the FTP server. Make sure the FTP server is properly configured, the connection and the FTP account's permission are ok. See Section 21.2 on page 301.

29.3 Device Firmware Management

Why do I always fail to upload a firmware file to the Vantage CNM?

1. Make sure if you have configured the FTP information properly in the **CNM System Setting** > **Configuration** > **Servers** > **Configuration**. You can use the **CNM System Setting** > **Configuration** > **Servers** > **Configuration > Status** screen to check if the connection is ok between the Vantage CNM and the FTP server.
2. Vantage CNM uses the FTP account you provided to ftp the server. And create a / vantage folder for the file upload/download under the account's directory. Therefore, make sure the FTP account's permission includes Files (read/write/delete), Directories (list/create/delete) and Sub-directories (inherit).

29.4 Vantage Report

There is no information in any report for my device.

1. If you just added the device, wait. See Table 224 on page 413 for the amount of time it takes for information to appear in each report.
2. Click **System > VRPT Management > General > Receiver Monitor**. This screen keeps track of all the log entries received by the Vantage Report server.
   - If the MAC address is in the screen, Vantage Report is receiving information from the device. Wait.
   - If the MAC address is not in the file, Vantage Report is not receiving information from the device. Make sure you have selected the devices in the **Managed Device List** in the **System > VRPT Management > General** screen. See Section 21.6.1 on page 306.
3. Check the amount of available disk space on the Vantage Report server. If it is less than the value in Appendix A on page 341, the Vantage Report server stops receiving log entries.
4. Make sure your devices support Vantage Report. Check the release notes for the current firmware version.
5. Check the connections between the devices and Vantage Report server.
6. If the problem continues, contact your local vendor.

There is information in some reports, but there is no information in others.

1. Make sure your devices support these reports. Check the release notes for the current firmware version.
2. Make sure you have selected the devices in the **Managed Device List** in the **System > VRPT Management > General** screen. See Section 21.6.1 on page 306.
3. Make sure there are log entries or traffic statistics for the report dates you selected. For example, if there were no attacks yesterday, yesterday's attack report is empty.
4. If the problem continues, contact your local vendor.

PART IX Appendices and Index

Product Specifications (341)
Setting up Your Computer's IP Address (345)
Pop-up Windows, Java Scripts and Java Permissions (361)
IP Addresses and Subnetting (367)
IP Address Assignment Conflicts (375)
Common Services (379)
Importing Certificates (383)
Open Software Announcements (393)
Legal Information (417)
Customer Support (419)
Index (425)

A

Product Specifications

This appendix summarizes Vantage CNM's and Vantage Report's specifications.

Vantage CNM Specifications

This section summarizes Vantage CNM's specifications.

Table 164 Firmware Specifications

FEATURE	DESCRIPTION
Default User Name	root
Default Password	root
Object Tree View	Three defined views: Account, Type, and Main Status icons
Device Registration	Manual or XML file
Building Blocks (BB)	Reusable configurations BB repository
Domain Administration	One domain per administrator Multiple administrators per domain Different privileges for each administrator
Device Configuration	Vantage CNM's **Configuration** menu Device's web configurator Most device features, including and UTM features
Synchronization	Copy device's configuration to Vantage CNM Copy Vantage CNM's configuration to device
Configuration File Management	Back up, restore, and reset one or more devices
Firmware Upgrade	Upload firmware to one or more devices Upgrade scheduler Upgrade report
Monitoring and Notifications	Alarm monitor Status monitor for urgent alerts E-mail alerts
Logs	Vantage CNM logs Vantage Report for device logs

Table 164 Firmware Specifications (continued)

FEATURE	DESCRIPTION
Data Maintenance	Back up and restore entire Vantage CNM configuration
System Management	Vantage CNM server IP address FTP server Mail server Idle timeout Brute-force password protection Notification recipients Administrator privileges

Table 165 Feature Specifications

FEATURE	DESCRIPTION
Number of Vantage CNM Log Entries	1,000,000

Table 166 ZyXEL Device and the Corresponding Firmware Version Vantage CNM Supports

ZYXEL DEVICE	FIRMWARE VERSION
ZyNOS ZyWALL: ZyNOS (ZyXEL Networking Operation System) is a ZyXEL proprietary system.	
ZyWALL 2	3.62
ZyWALL 5 / 35 / 70 / 2 Plus	4.00 or later
ZyWALL 2WG	4.02 or later
ZLD ZyWALL: ZLD (ZyXEL Linux Distribution) is ZyXEL's platform based on Linux.	
ZyWALL 1050	2.01 or later
ZyWALL USG 300 / 1000	2.01 or later
P-662H(W)-D1 / P-662H(W)-61 / P-662HW-63 / P-653HWI-17	3.40

Table 167 Trusted CAs (Keystore type: jks, Keystore provider: SUN)

CA	DATE	MD5 FINGERPRINT
equifaxsecureebusinessca1	Jul 19, 2003	64:9C:EF:2E:44:FC:C6:8F:52:07:D0:51:73:8F:CB:3D
verisignclass1g3ca	Mar 26, 2004	B1:47:BC:18:57:D1:18:A0:78:2D:EC:71:E8:2A:95:73
verisignclass2g2ca	Mar 26, 2004	2D:BB:E5:25:D3:D1:65:82:3A:B7:0E:FA:E6:EB:E2:E1
verisignclass3g3ca	Mar 26, 2004	CD:68:B6:A7:C7:C4:CE:75:E0:1D:4F:57:44:61:92:09
godaddyclass2ca	Jan 12, 2005	91:DE:06:25:AB:DA:FD:32:17:0C:BB:25:17:2A:84:67
entrustglobalclientca	Jan 9, 2003	9A:77:19:18:ED:96:CF:DF:1B:B7:0E:F5:8D:B9:88:2E
mykey	Nov 30, 2006	8D:E9:89:DB:7F:CC:5E:3B:FD:DE:2C:42:08:13:EF:43
gtecybertrustglobalca	May 10, 2002	CA:3D:D3:68:F1:03:5C:D0:32:FA:B8:2B:59:E8:5A:DB
entrustgsslca	Jan 9, 2003	9D:66:6A:CC:FF:D5:F5:43:B4:BF:8C:16:D1:2B:A8:99

Table 167 Trusted CAs (Keystore type: jks, Keystore provider: SUN) (continued)

CA	DATE	MD5 FINGERPRINT
thawtepersonalbasicca	Feb 13, 1999	E6:0B:D2:C9:CA:2D:88:DB:1A:71:0E:4B:78:EB:02:41
verisignclass1ca	Mar 26, 2004	97:60:E8:57:5F:D3:50:47:E5:43:0C:94:36:8A:B0:62
verisignclass1g2ca	Mar 26, 2004	DB:23:3D:F9:69:FA:4B:B9:95:80:44:73:5E:7D:41:83
entrustsslca	Jan 9, 2003	DF:F2:80:73:CC:F1:E6:61:73:FC:F5:42:E9:C5:7C:EE
thawtepersonalfreemailca	Feb 13, 1999	1E:74:C3:86:3C:0C:35:C5:3E:C2:7F:EF:3C:AA:3C:D9
verisignclass3ca	Oct 27, 2003	10:FC:63:5D:F6:26:3E:0D:F3:25:BE:5F:79:CD:67:67
gtecybertrustca	May 10, 2002	C4:D7:F0:B2:A3:C5:7D:61:67:F0:04:CD:43:D3:BA:58
verisignclass2g3ca	Mar 26, 2004	F8:BE:C4:63:22:C9:A8:46:74:8B:B8:1D:1E:4A:2B:F6
thawteserverca	Feb 13, 1999	C5:70:C4:A2:ED:53:78:0C:C8:10:53:81:64:CB:D0:1D
thawtepersonalpremiumca	Feb 13, 1999	3A:B2:DE:22:9A:20:93:49:F9:ED:C8:D2:8A:E7:68:0D
equifaxsecureca	Jul 19, 2003	67:CB:9D:C0:13:24:8A:82:9B:B2:17:1E:D1:1B:EC:D4
verisignclass3g2ca	Mar 26, 2004	A2:33:9B:4C:74:78:73:D4:6C:E7:C1:F3:8D:CB:5C:E9
thawtepremiumserverca	Feb 13, 1999	06:9F:69:79:16:66:90:02:1B:8C:8C:A2:C3:07:6F:3A
entrust2048ca	Jan 9, 2003	BA:21:EA:20:D6:DD:DB:8F:C1:57:8B:40:AD:A1:FC:FC
entrustclientca	Jan 9, 2003	0C:41:2F:13:5B:A0:54:F5:96:66:2D:7E:CD:0E:03:F4
verisignserverca	Jun 30, 1998	74:7B:82:03:43:F0:00:9E:6B:B3:EC:47:BF:85:A5:93
baltimorecybertrustca	May 10, 2002	AC:B6:94:A5:9C:17:E0:D7:91:52:9B:B1:97:06:A6:E4
valicertclass2ca	Jan 12, 2005	A9:23:75:9B:BA:49:36:6E:31:C2:DB:F2:E7:66:BA:87
geotrustglobalca	Jul 19, 2003	F7:75:AB:29:FB:51:4E:B7:77:5E:FF:05:3C:99:8E:F5
gtecybertrust5ca	May 10, 2002	7D:6C:86:E4:FC:4D:D1:0B:00:BA:22:BB:4E:7C:6A:8E
starfieldclass2ca	Jan 12, 2005	32:4A:4B:BB:C8:63:69:9B:BE:74:9A:C6:DD:1D:46:24
baltimorecodesigningca	May 10, 2002	90:F5:28:49:56:D1:5D:2C:B0:53:D4:4B:EF:6F:90:22

Table 167 Trusted CAs (Keystore type: jks, Keystore provider: SUN) (continued)

CA	DATE	MD5 FINGERPRINT
equifaxsecureglobalebusinessca1	Jul 19, 2003	8F:5D:77:06:27:C4:98:3C:5B:93:78:E7:D7:7D:9B:CC
equifaxsecureebusinessca2	Jul 19, 2003	AA:BF:BF:64:97:DA:98:1D:6F:C6:08:3A:95:70:33:CA
verisignclass2ca	Oct 27, 2003	B3:9C:25:B1:C3:2E:32:53:80:15:30:9D:4D:02:77:3E

Vantage Report Specifications

This section summarizes Vantage Report's specifications. See Table 224 on page 413 for specifications about the time it takes the Vantage Report server to process information from devices.

Table 168 Port Number Specifications

FEATURE	SPECIFICATION
MySQL port number	3316

Table 169 System Notifications Specifications

FEATURE	SPECIFICATION
Maximum number of records in any table in the database	15,000,000
Warning: Maximum number of records in any table in the database	10,000,000
Minimum amount of free disk space required to run Vantage Report	600 MB
Warning: Minimum amount of free disk space required to run Vantage Report	per **Low Free Disk Mark**

Table 170 Feature Specifications

FEATURE	SPECIFICATION
Number of supported devices	Up to 25
Number of scheduled reports	500
Maximum Number of Entries in the Table at the Bottom of Each Statistical Report	10
Log Consolidation Frequency	4 minutes

Table 171 Default Access

Administrator's username	root
Administrator's password	root
Configurator Access	https://{VRPT_public_IP}:8088/vrpt

B

Setting up Your Computer's IP Address

All computers must have a 10M or 100M Ethernet adapter card and TCP/IP installed.

Windows 95/98/Me/NT/2000/XP, Macintosh OS 7 and later operating systems and all versions of UNIX/LINUX include the software components you need to install and use TCP/IP on your computer. Windows 3.1 requires the purchase of a third-party TCP/IP application package.

TCP/IP should already be installed on computers using Windows NT/2000/XP, Macintosh OS 7 and later operating systems.

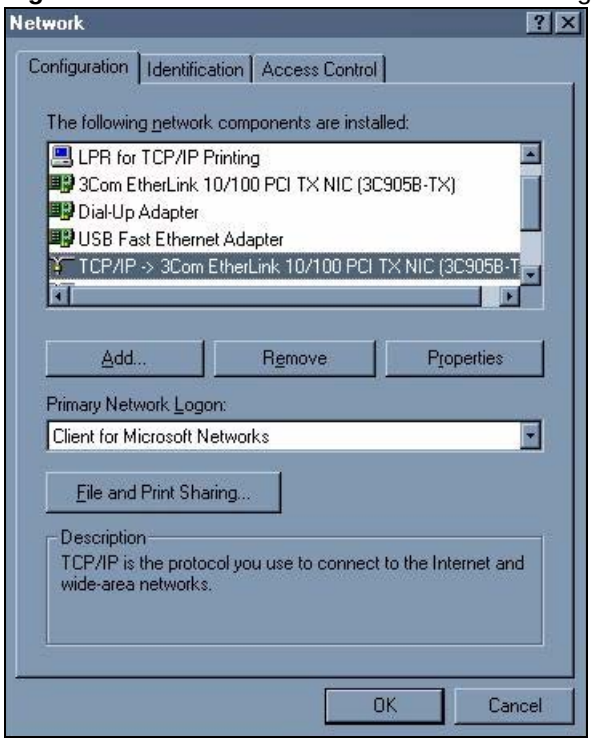
After the appropriate TCP/IP components are installed, configure the TCP/IP settings in order to "communicate" with your network.

If you manually assign IP information instead of using dynamic assignment, make sure that your computers have IP addresses that place them in the same subnet as the device's LAN port.

Windows 95/98/Me

Click **Start**, **Settings**, **Control Panel** and double-click the **Network** icon to open the **Network** window.

Figure 192 WIndows 95/98/Me: Network: Configuration



Installing Components

The **Network** window **Configuration** tab displays a list of installed components. You need a network adapter, the TCP/IP protocol and Client for Microsoft Networks.

If you need the adapter:

1. In the **Network** window, click **Add**.
2. Select **Adapter** and then click **Add**.
3. Select the manufacturer and model of your network adapter and then click **OK**.

If you need TCP/IP:

1. In the **Network** window, click **Add**.
2. Select **Protocol** and then click **Add**.
3. Select **Microsoft** from the list of **manufacturers**.
4. Select **TCP/IP** from the list of network protocols and then click **OK**.

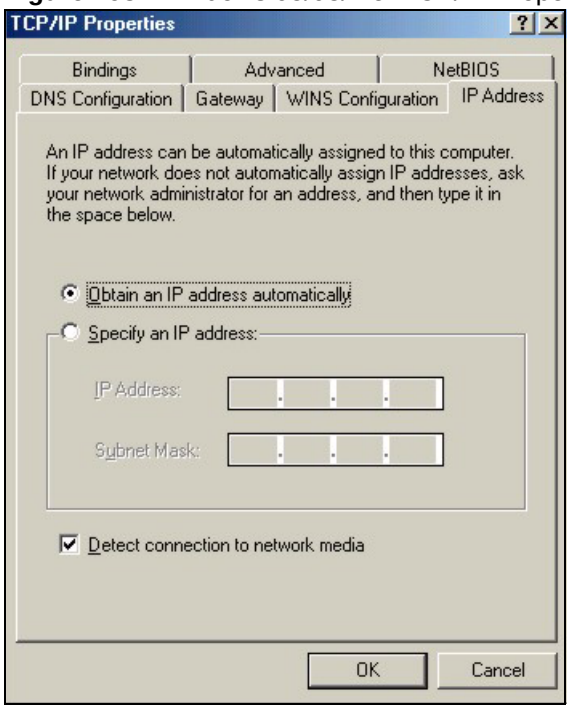
If you need Client for Microsoft Networks:

1. Click **Add**.
2. Select **Client** and then click **Add**.
3. Select **Microsoft** from the list of manufacturers.
4. Select **Client for Microsoft Networks** from the list of network clients and then click **OK**.
5. Restart your computer so the changes you made take effect.

Configuring

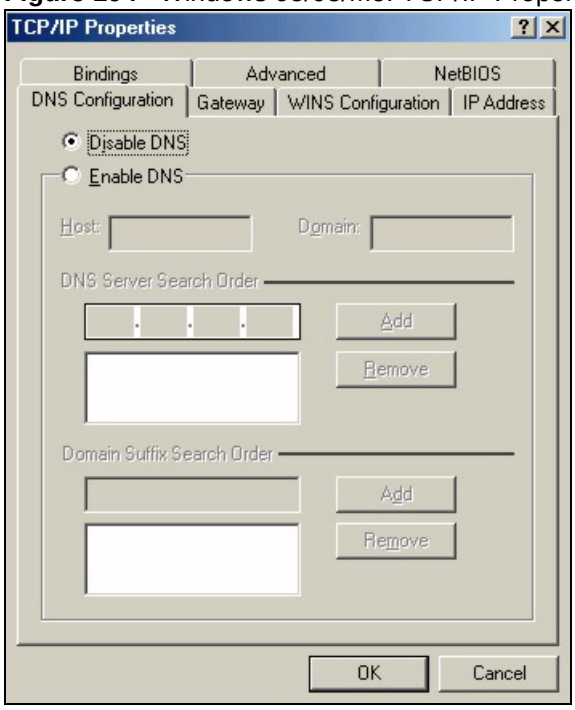
1. In the **Network** window **Configuration** tab, select your network adapter's TCP/IP entry and click **Properties**
2. Click the **IP Address** tab.
   - If your IP address is dynamic, select **Obtain an IP address automatically**.
   - If you have a static IP address, select **Specify an IP address** and type your information into the **IP Address** and **Subnet Mask** fields.

Figure 193 Windows 95/98/Me: TCP/IP Properties: IP Address


TCP/IP Properties
Bindings
Advanced
NetBIOS
DNS Configuration
Gateway
WINS Configuration
IP Address
An IP address can be automatically assigned to this computer. If your network does not automatically assign IP addresses, ask your network administrator for an address, and then type it in the space below.
Obtain an IP address automatically
Specify an IP address:
IP Address:
Subnet Mask:
Detect connection to network media
OK
Cancel

3. Click the **DNS** Configuration tab.
   - If you do not know your DNS information, select **Disable DNS**.
   - If you know your DNS information, select **Enable DNS** and type the information in the fields below (you may not need to fill them all in).

Figure 194 Windows 95/98/Me: TCP/IP Properties: DNS Configuration



4 Click the **Gateway** tab.
   - If you do not know your gateway's IP address, remove previously installed gateways.
   - If you have a gateway IP address, type it in the **New gateway field** and click **Add**.
5 Click **OK** to save and close the **TCP/IP Properties** window.
6 Click **OK** to close the **Network** window. Insert the Windows CD if prompted.
7 Turn on your device and restart your computer when prompted.

Verifying Settings

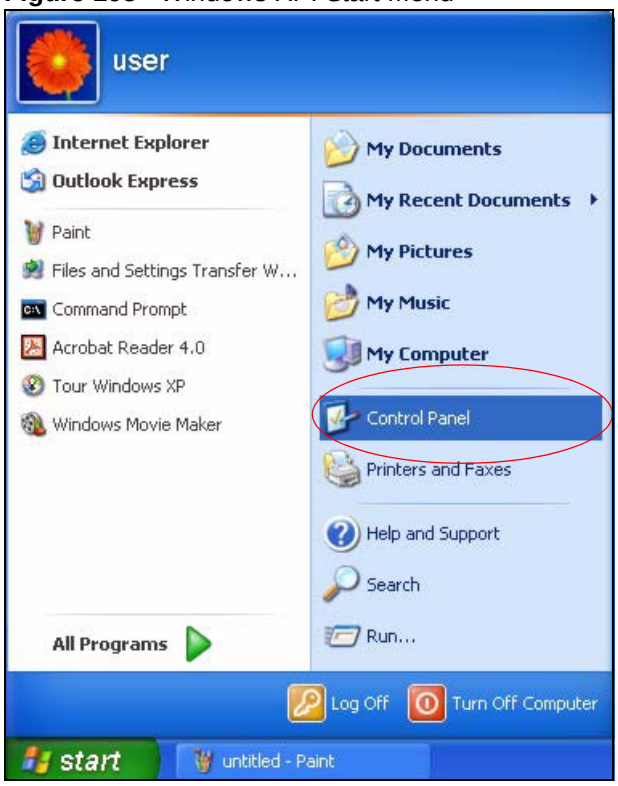
1 Click **Start** and then **Run**.
2 In the **Run** window, type "winipcfg" and then click **OK** to open the **IP Configuration** window.
3 Select your network adapter. You should see your computer's IP address, subnet mask and default gateway.

Windows 2000/NT/XP

The following example figures use the default Windows XP GUI theme.

1 Click **start** (**Start** in Windows 2000/NT), **Settings**, **Control Panel**.

Figure 195 Windows XP: Start Menu

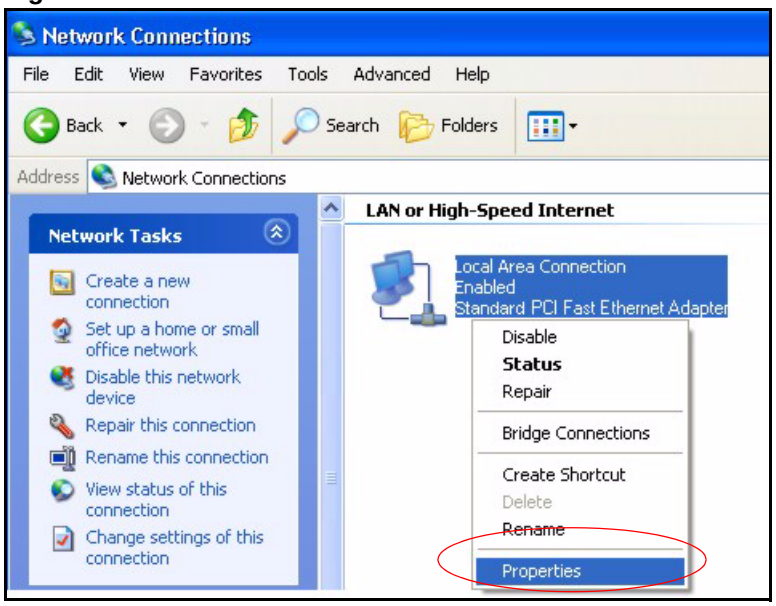


2 In the **Control Panel**, double-click **Network Connections** (**Network and Dial-up Connections** in Windows 2000/NT).

Figure 196 Windows XP: Control Panel

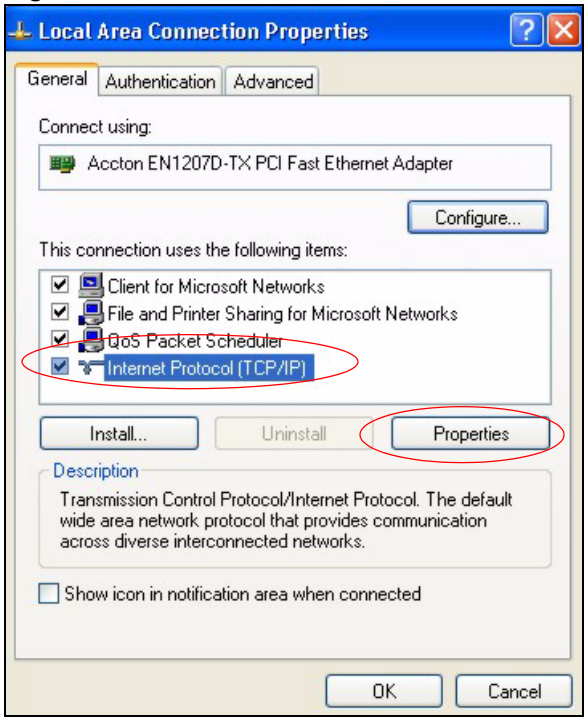
3 Right-click **Local Area Connection** and then click **Properties**.

Figure 197 Windows XP: Control Panel: Network Connections: Properties



4 Select **Internet Protocol (TCP/IP)** (under the **General** tab in Win XP) and then click **Properties**.

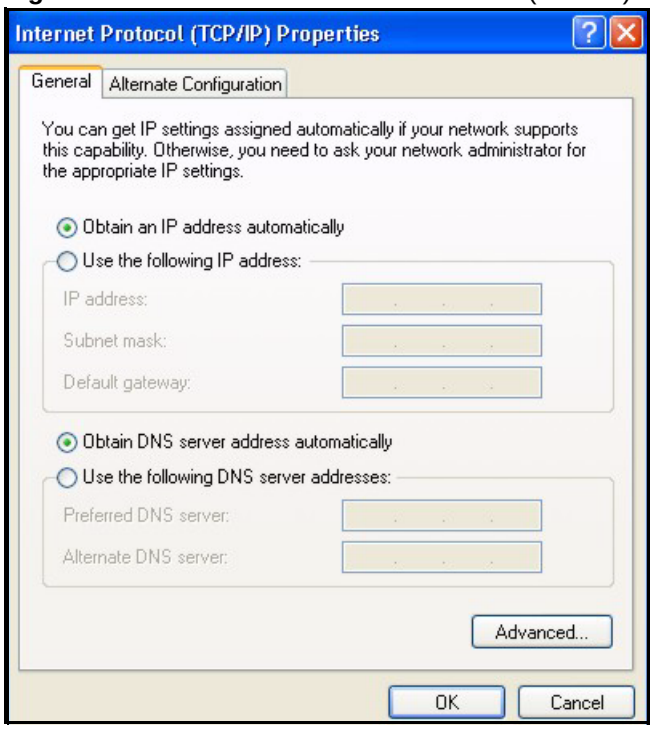
Figure 198 Windows XP: Local Area Connection Properties


Local Area Connection Properties
General Authentication Advanced
Connect using:
Accton EN1207D-TX PCI Fast Ethernet Adapter
Configure...
This connection uses the following items:
Client for Microsoft Networks
File and Printer Sharing for Microsoft Networks
QoS Packet Scheduler
Internet Protocol (TCP/IP)
Install... Uninstall Properties
Description
Transmission Control Protocol/Internet Protocol. The default wide area network protocol that provides communication across diverse interconnected networks.
Show icon in notification area when connected
OK Cancel

5 The **Internet Protocol TCP/IP Properties** window opens (the **General tab** in Windows XP).

- If you have a dynamic IP address click **Obtain an IP address automatically**.
- If you have a static IP address click **Use the following IP Address** and fill in the **IP address**, **Subnet mask**, and **Default gateway** fields.
- Click **Advanced**.

Figure 199 Windows XP: Internet Protocol (TCP/IP) Properties

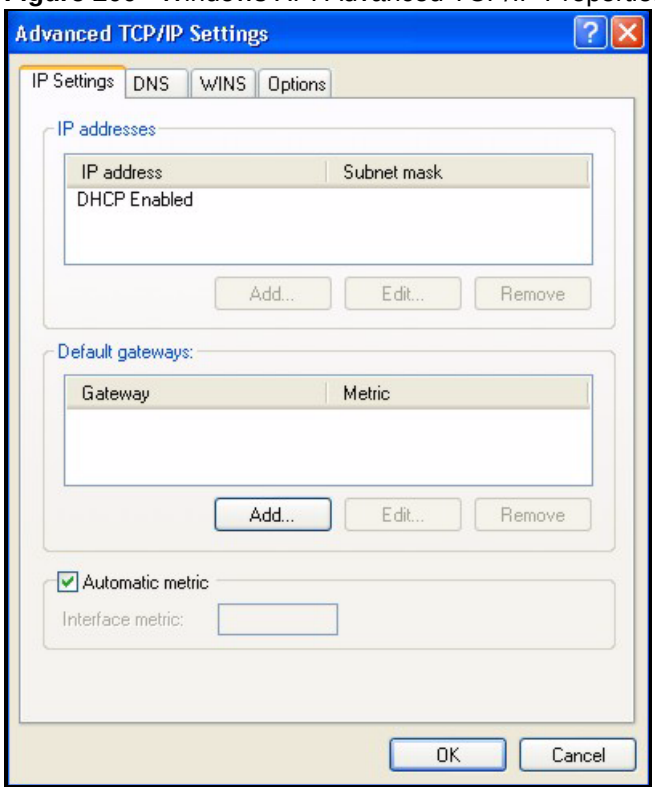

Internet Protocol (TCP/IP) Properties
General
Alternate Configuration
You can get IP settings assigned automatically if your network supports this capability. Otherwise, you need to ask your network administrator for the appropriate IP settings.
Obtain an IP address automatically
Use the following IP address:
IP address:
Subnet mask:
Default gateway:
Obtain DNS server address automatically
Use the following DNS server addresses:
Preferred DNS server:
Alternate DNS server:
Advanced...
OK
Cancel

6 If you do not know your gateway's IP address, remove any previously installed gateways in the **IP Settings** tab and click **OK**.

Do one or more of the following if you want to configure additional IP addresses:

- In the **IP Settings** tab, in IP addresses, click **Add**.
- In **TCP/IP Address**, type an IP address in **IP address** and a subnet mask in **Subnet mask**, and then click **Add**.
- Repeat the above two steps for each IP address you want to add.
- Configure additional default gateways in the **IP Settings** tab by clicking **Add** in **Default gateways**.
- In **TCP/IP Gateway Address**, type the IP address of the default gateway in **Gateway**. To manually configure a default metric (the number of transmission hops), clear the **Automatic metric** check box and type a metric in **Metric**.
- Click **Add**.
- Repeat the previous three steps for each default gateway you want to add.
- Click **OK** when finished.

Figure 200 Windows XP: Advanced TCP/IP Properties

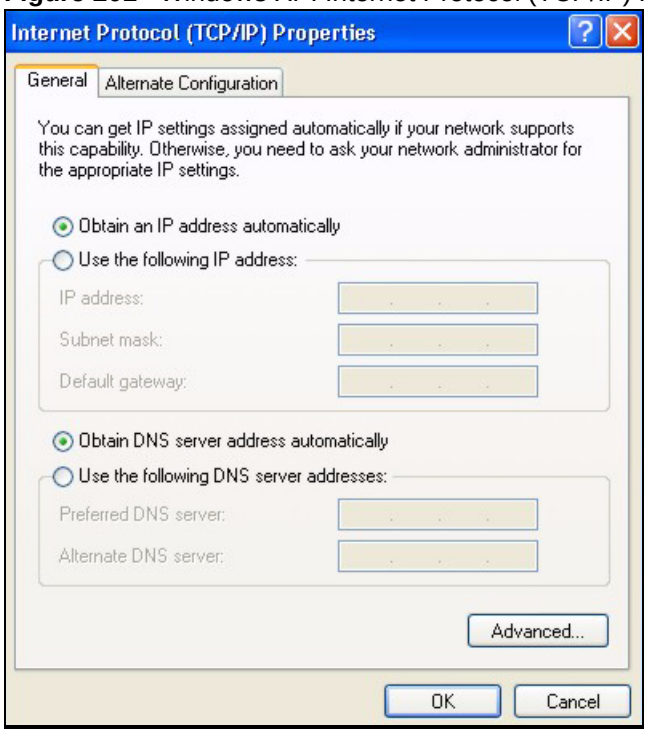


7 In the **Internet Protocol TCP/IP Properties** window (the **General** tab in Windows XP):

- Click **Obtain DNS server address automatically** if you do not know your DNS server IP address(es).
- If you know your DNS server IP address(es), click **Use the following DNS server addresses**, and type them in the **Preferred DNS server** and **Alternate DNS server** fields.

  If you have previously configured DNS servers, click **Advanced** and then the **DNS** tab to order them.

Figure 201 Windows XP: Internet Protocol (TCP/IP) Properties


Internet Protocol (TCP/IP) Properties
General
Alternate Configuration
You can get IP settings assigned automatically if your network supports this capability. Otherwise, you need to ask your network administrator for the appropriate IP settings.
Obtain an IP address automatically
Use the following IP address:
IP address:
Subnet mask:
Default gateway:
Obtain DNS server address automatically
Use the following DNS server addresses:
Preferred DNS server:
Alternate DNS server:
Advanced...
OK
Cancel

8 Click **OK** to close the **Internet Protocol (TCP/IP) Properties** window.

9 Click **Close** (**OK** in Windows 2000/NT) to close the **Local Area Connection Properties** window.

10 Close the **Network Connections** window (**Network and Dial-up Connections** in Windows 2000/NT).

11 Turn on your device and restart your computer (if prompted).

Verifying Settings

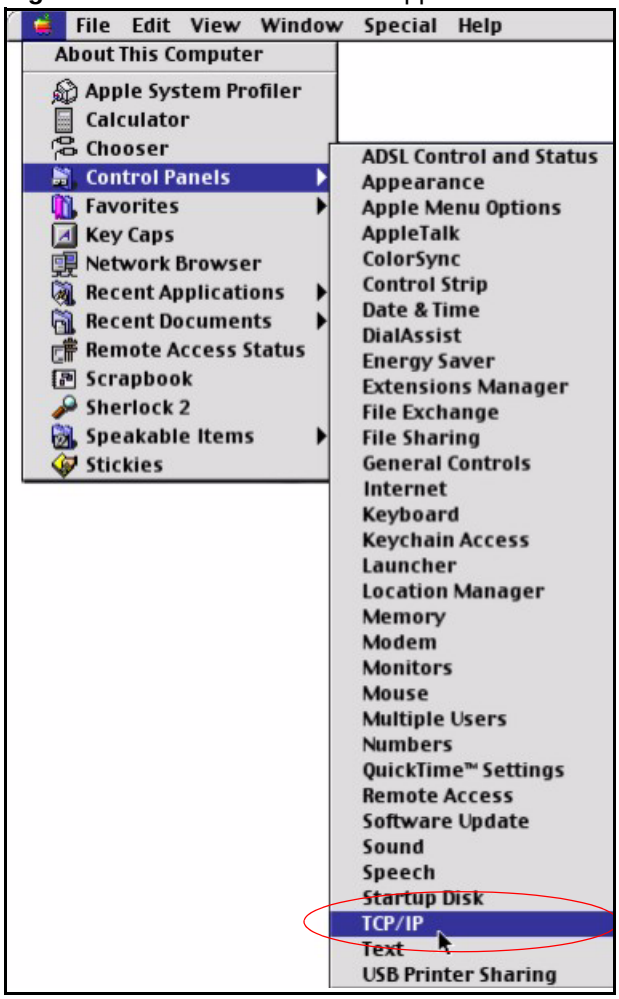
1 Click **Start**, **All Programs**, **Accessories** and then **Command Prompt**.

2 In the **Command Prompt** window, type "ipconfig" and then press [ENTER]. You can also open **Network Connections**, right-click a network connection, click **Status** and then click the **Support** tab.

Macintosh OS 8/9

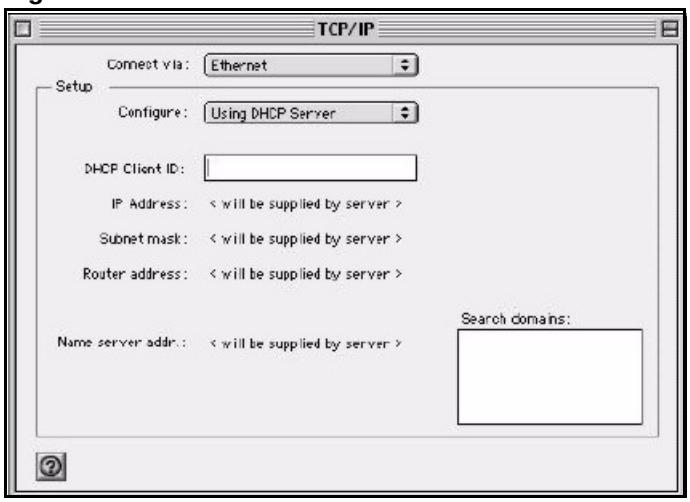
1 Click the **Apple** menu, **Control Panel** and double-click **TCP/IP** to open the **TCP/IP Control Panel**.

Figure 202 Macintosh OS 8/9: Apple Menu



2 Select **Ethernet built-in** from the **Connect via** list.

Figure 203 Macintosh OS 8/9: TCP/IP



3 For dynamically assigned settings, select **Using DHCP Server** from the **Configure:** list.

4 For statically assigned settings, do the following:

- From the **Configure** box, select **Manually**.

- Type your IP address in the **IP Address** box.
- Type your subnet mask in the **Subnet mask** box.
- Type the IP address of your device in the **Router address** box.

5 Close the **TCP/IP Control Panel**.

6 Click **Save** if prompted, to save changes to your configuration.

7 Turn on your device and restart your computer (if prompted).

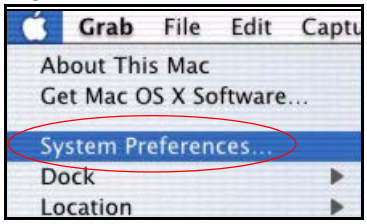
Verifying Settings

Check your TCP/IP properties in the **TCP/IP Control Panel** window.

Macintosh OS X

1 Click the **Apple** menu, and click **System Preferences** to open the **System Preferences** window.

Figure 204 Macintosh OS X: Apple Menu

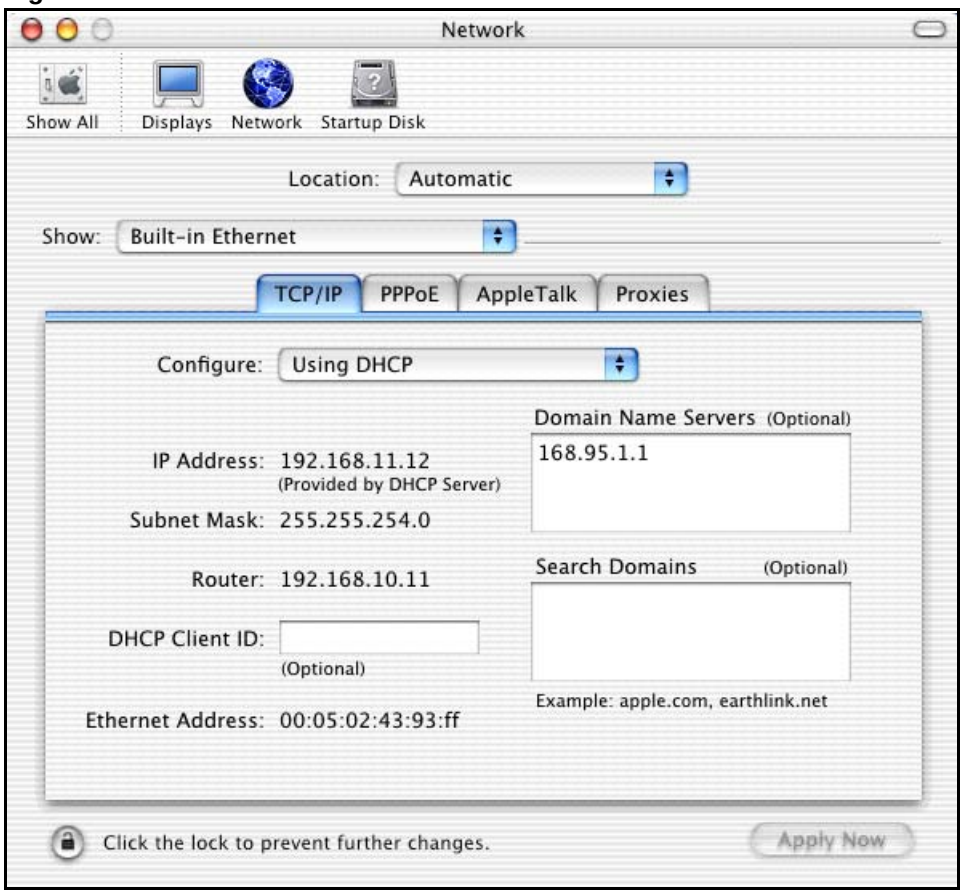


2 Click **Network** in the icon bar.

- Select **Automatic** from the **Location** list.
- Select **Built-in Ethernet** from the **Show** list.
- Click the **TCP/IP** tab.

3 For dynamically assigned settings, select **Using DHCP** from the **Configure** list.

Figure 205 Macintosh OS X: Network



4 For statically assigned settings, do the following:
   - From the **Configure** box, select **Manually**.
   - Type your IP address in the **IP Address** box.
   - Type your subnet mask in the **Subnet mask** box.
   - Type the IP address of your device in the **Router address** box.
5 Click **Apply Now** and close the window.
6 Turn on your device and restart your computer (if prompted).

Verifying Settings

Check your TCP/IP properties in the **Network** window.

Linux

This section shows you how to configure your computer's TCP/IP settings in Red Hat Linux 9.0. Procedure, screens and file location may vary depending on your Linux distribution and release version.

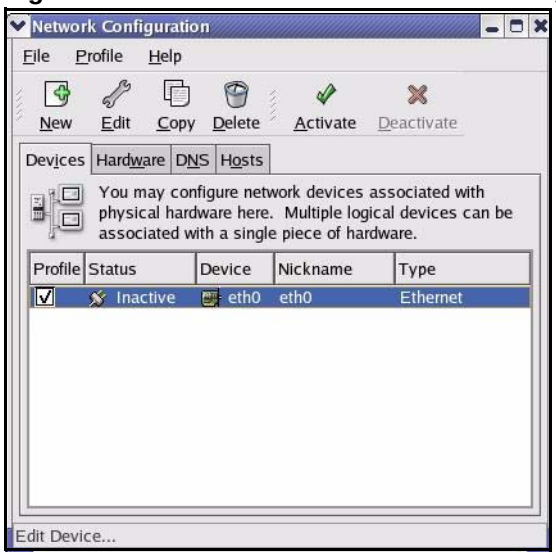
Make sure you are logged in as the root administrator.

Using the K Desktop Environment (KDE)

Follow the steps below to configure your computer IP address using the KDE.

1 Click the Red Hat button (located on the bottom left corner), select **System Setting** and click **Network**.

Figure 206 Red Hat 9.0: KDE: Network Configuration: Devices



2 Double-click on the profile of the network card you wish to configure. The **Ethernet Device General** screen displays as shown.

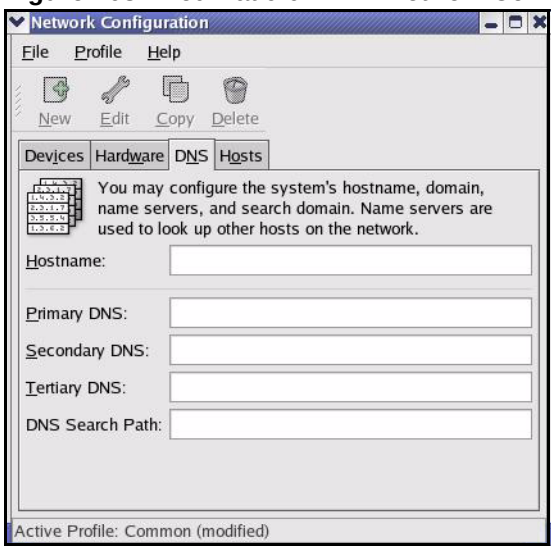
Figure 207 Red Hat 9.0: KDE: Ethernet Device: General

- If you have a dynamic IP address, click **Automatically obtain IP address settings with** and select **dhcp** from the drop down list.
- If you have a static IP address, click **Statically set IP Addresses** and fill in the **Address**, **Subnet mask**, and **Default Gateway Address** fields.

3 Click **OK** to save the changes and close the **Ethernet Device General** screen.

4 If you know your DNS server IP address(es), click the **DNS** tab in the **Network Configuration** screen. Enter the DNS server information in the fields provided.

Figure 208 Red Hat 9.0: KDE: Network Configuration: DNS



5 Click the **Devices** tab.

6 Click the **Activate** button to apply the changes. The following screen displays. Click **Yes to save the changes in all screens.**

Figure 209 Red Hat 9.0: KDE: Network Configuration: Activate

Question
redhat-config-network:
You have made some changes in your configuration.
To activate the network device eth0, the changes have to be saved.
Do you want to continue?
No
Yes

7 After the network card restart process is complete, make sure the **Status** is **Active** in the **Network Configuration** screen.

Using Configuration Files

Follow the steps below to edit the network configuration files and set your computer IP address.

1 Assuming that you have only one network card on the computer, locate the `ifconfig-eth0` configuration file (where `eth0` is the name of the Ethernet card). Open the configuration file with any plain text editor.

- If you have a dynamic IP address, enter **`dhcp`** in the `BOOTPROTO=` field. The following figure shows an example.

Figure 210 Red Hat 9.0: Dynamic IP Address Setting in ifconfig-eth0

```
DEVICE=eth0
ONBOOT=yes
BOOTPROTO=dhcp
USERCTL=no
PEERDNS=yes
TYPE=Ethernet
```

- If you have a static IP address, enter **static** in the BOOTPROTO= field. Type IPADDR= followed by the IP address (in dotted decimal notation) and type NETMASK= followed by the subnet mask. The following example shows an example where the static IP address is 192.168.1.10 and the subnet mask is 255.255.255.0.

Figure 211 Red Hat 9.0: Static IP Address Setting in ifconfig-eth0

```
DEVICE=eth0
ONBOOT=yes
BOOTPROTO=static
IPADDR=192.168.1.10
NETMASK=255.255.255.0
USERCTL=no
PEERDNS=yes
TYPE=Ethernet
```

2. If you know your DNS server IP address(es), enter the DNS server information in the `resolv.conf` file in the `/etc` directory. The following figure shows an example where two DNS server IP addresses are specified.

Figure 212 Red Hat 9.0: DNS Settings in resolv.conf

```
nameserver 10.1.5.1
nameserver 10.1.5.2
```

3. After you edit and save the configuration files, you must restart the network card. Enter `./network restart` in the `/etc/rc.d/init.d` directory. The following figure shows an example.

Figure 213 Red Hat 9.0: Restart Ethernet Card

```
[root@localhost init.d]# network restart

Shutting down interface eth0:                [OK]
Shutting down loopback interface:            [OK]
Setting network parameters:                  [OK]
Bringing up loopback interface:              [OK]
Bringing up interface eth0:                  [OK]
```

Verifying Settings

Enter `ifconfig` in a terminal screen to check your TCP/IP properties.

Figure 214 Red Hat 9.0: Checking TCP/IP Properties

```
[root@localhost]# ifconfig
eth0      Link encap:Ethernet  HWaddr 00:50:BA:72:5B:44
          inet addr:10.1.19.129  Bcast:10.1.19.255  Mask:255.255.255.0
          UP BROADCAST RUNNING MULTICAST  MTU:1500  Metric:1
          RX packets:717 errors:0 dropped:0 overruns:0 frame:0
          TX packets:13 errors:0 dropped:0 overruns:0 carrier:0
          collisions:0 txqueuelen:100
          RX bytes:730412 (713.2 Kb)  TX bytes:1570 (1.5 Kb)
          Interrupt:10 Base address:0x1000
[root@localhost]#
```

C

Pop-up Windows, Java Scripts and Java Permissions

In order to use the web configurator you need to allow:

- Web browser pop-up windows from your device.
- Java Scripts (enabled by default).
- Java permissions (enabled by default).

Internet Explorer 6 screens are used here. Screens for other Internet Explorer versions may vary.

Internet Explorer Pop-up Blockers

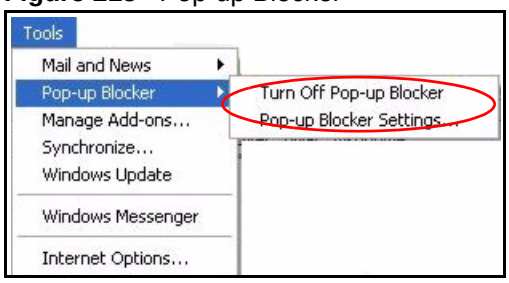
You may have to disable pop-up blocking to log into your device.

Either disable pop-up blocking (enabled by default in Windows XP SP (Service Pack) 2) or allow pop-up blocking and create an exception for your device's IP address.

Disable pop-up Blockers

1 In Internet Explorer, select **Tools**, **Pop-up Blocker** and then select **Turn Off Pop-up Blocker**.

Figure 215 Pop-up Blocker

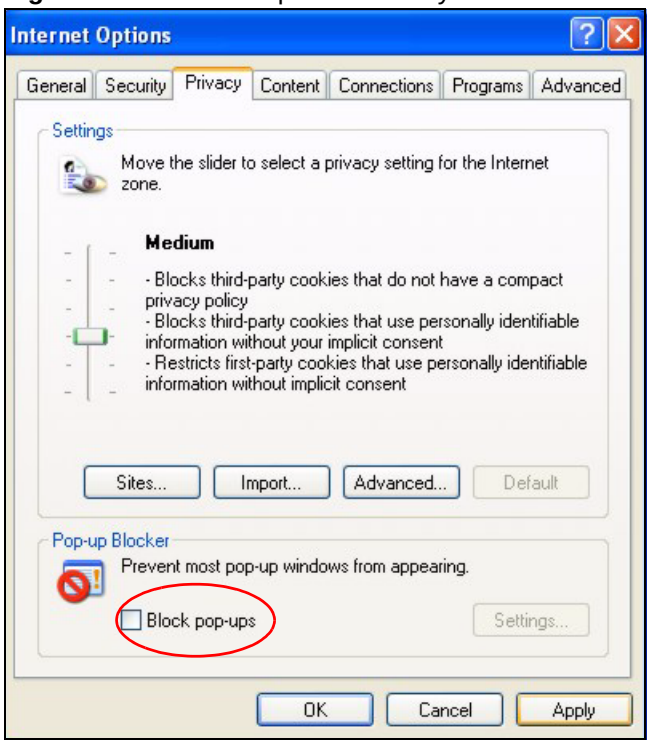


You can also check if pop-up blocking is disabled in the **Pop-up Blocker** section in the **Privacy** tab.

1 In Internet Explorer, select **Tools**, **Internet Options**, **Privacy**.

2 Clear the **Block pop-ups** check box in the **Pop-up Blocker** section of the screen. This disables any web pop-up blockers you may have enabled.

Figure 216 Internet Options: Privacy



3 Click **Apply** to save this setting.

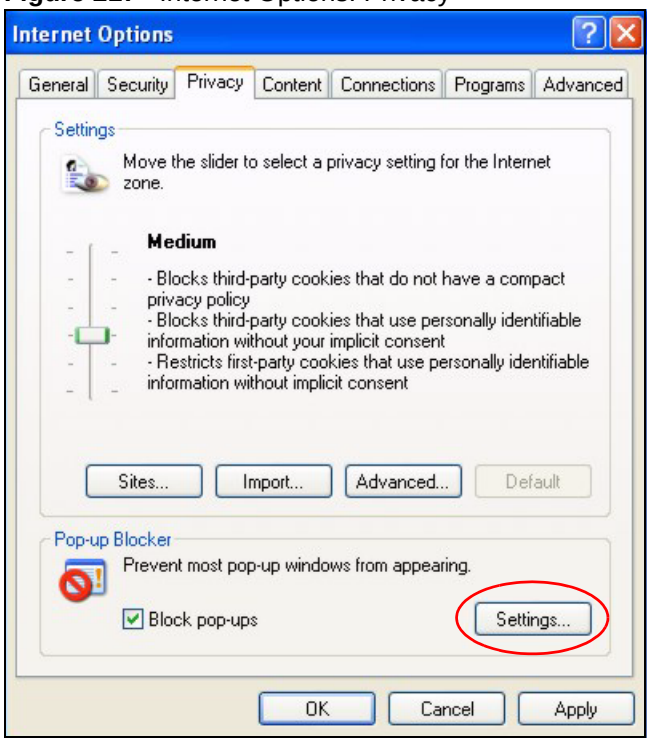
Enable pop-up Blockers with Exceptions

Alternatively, if you only want to allow pop-up windows from your device, see the following steps.

1 In Internet Explorer, select **Tools**, **Internet Options** and then the **Privacy** tab.

2 Select **Settings…**to open the **Pop-up Blocker Settings** screen.

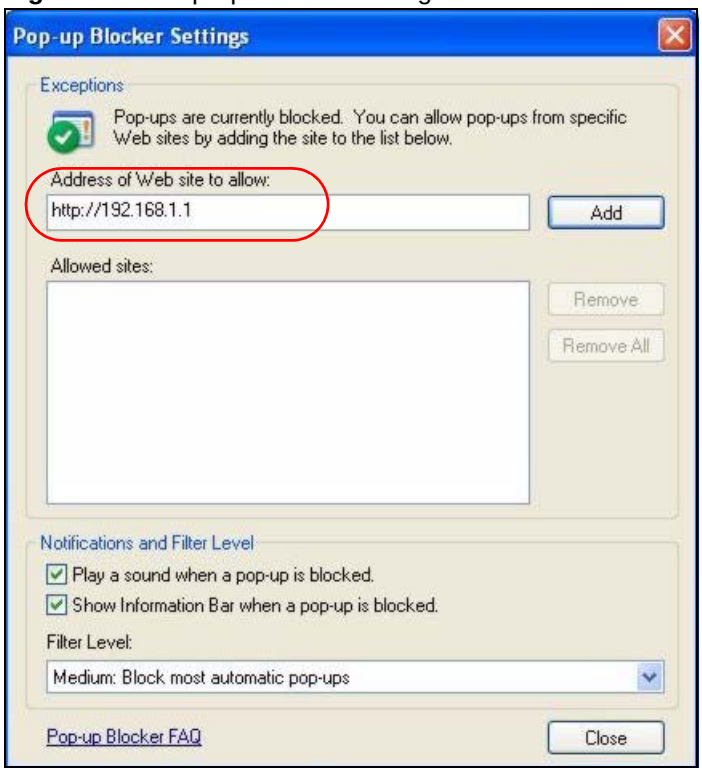
Figure 217 Internet Options: Privacy



3 Type the IP address of your device (the web page that you do not want to have blocked) with the prefix "http://". For example, http://192.168.167.1.

4 Click **Add** to move the IP address to the list of **Allowed sites**.

Figure 218 Pop-up Blocker Settings


Pop-up Blocker Settings
Exceptions
Pop-ups are currently blocked. You can allow pop-ups from specific Web sites by adding the site to the list below.
Address of Web site to allow:
http://192.168.1.1
Add
Allowed sites:
Remove
Remove All
Notifications and Filter Level
Play a sound when a pop-up is blocked.
Show Information Bar when a pop-up is blocked.
Filter Level:
Medium: Block most automatic pop-ups
Pop-up Blocker FAQ
Close

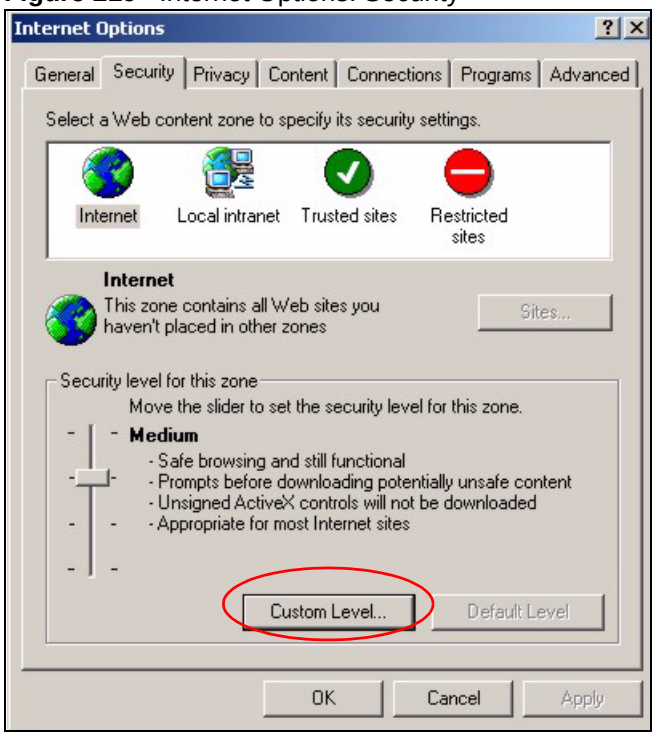
5 Click **Close** to return to the **Privacy** screen.
6 Click **Apply** to save this setting.

Java Scripts

If pages of the web configurator do not display properly in Internet Explorer, check that Java Scripts are allowed.

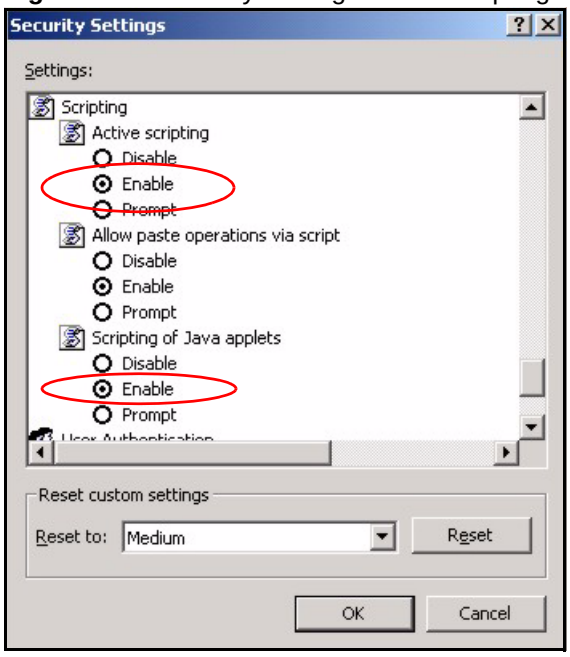
1 In Internet Explorer, click **Tools**, **Internet Options** and then the **Security** tab.

Figure 219 Internet Options: Security



2 Click the **Custom Level...** button.
3 Scroll down to **Scripting**.
4 Under **Active scripting** make sure that **Enable** is selected (the default).
5 Under **Scripting of Java applets** make sure that **Enable** is selected (the default).
6 Click **OK** to close the window.

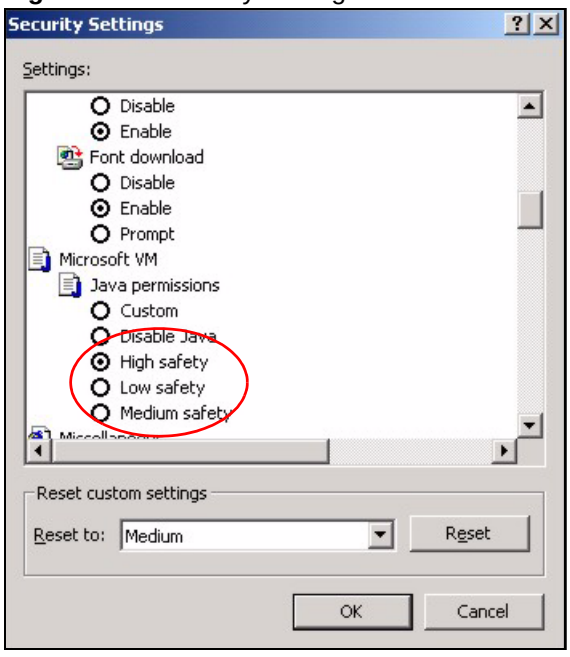
Figure 220 Security Settings - Java Scripting



Java Permissions

1. From Internet Explorer, click **Tools**, **Internet Options** and then the **Security** tab.
2. Click the **Custom Level...** button.
3. Scroll down to **Microsoft VM**.
4. Under **Java permissions** make sure that a safety level is selected.
5. Click **OK** to close the window.

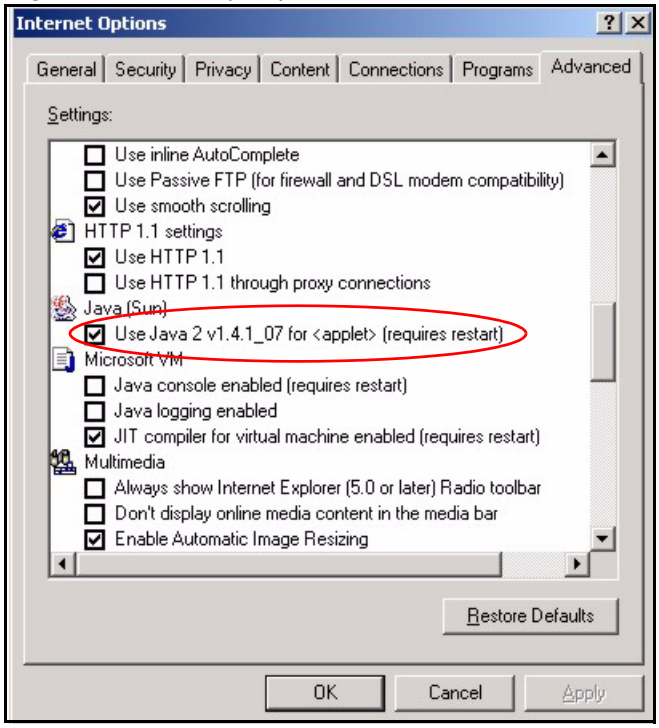
Figure 221 Security Settings - Java



JAVA (Sun)

1. From Internet Explorer, click **Tools**, **Internet Options** and then the **Advanced** tab.
2. Make sure that **Use Java 2 for <applet>** under **Java (Sun)** is selected.
3. Click **OK** to close the window.

Figure 222 Java (Sun)



D

IP Addresses and Subnetting

This appendix introduces IP addresses and subnet masks.

IP addresses identify individual devices on a network. Every networking device (including computers, servers, routers, printers, etc.) needs an IP address to communicate across the network. These networking devices are also known as hosts.

Subnet masks determine the maximum number of possible hosts on a network. You can also use subnet masks to divide one network into multiple sub-networks.

Introduction to IP Addresses

One part of the IP address is the network number, and the other part is the host ID. In the same way that houses on a street share a common street name, the hosts on a network share a common network number. Similarly, as each house has its own house number, each host on the network has its own unique identifying number - the host ID. Routers use the network number to send packets to the correct network, while the host ID determines to which host on the network the packets are delivered.

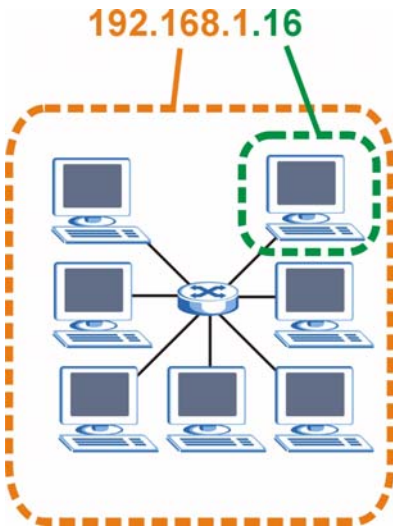
Structure

An IP address is made up of four parts, written in dotted decimal notation (for example, 192.168.1.1). Each of these four parts is known as an octet. An octet is an eight-digit binary number (for example 11000000, which is 192 in decimal notation).

Therefore, each octet has a possible range of 00000000 to 11111111 in binary, or 0 to 255 in decimal.

The following figure shows an example IP address in which the first three octets (192.168.1) are the network number, and the fourth octet (16) is the host ID.

Figure 223 Network Number and Host ID



How much of the IP address is the network number and how much is the host ID varies according to the subnet mask.

Subnet Masks

A subnet mask is used to determine which bits are part of the network number, and which bits are part of the host ID (using a logical AND operation). The term "subnet" is short for "sub-network".

A subnet mask has 32 bits. If a bit in the subnet mask is a "1" then the corresponding bit in the IP address is part of the network number. If a bit in the subnet mask is "0" then the corresponding bit in the IP address is part of the host ID.

The following example shows a subnet mask identifying the network number (in bold text) and host ID of an IP address (192.168.1.2 in decimal).

Table 172 IP Address Network Number and Host ID Example

	1ST OCTET: (192)	2ND OCTET: (168)	3RD OCTET: (1)	4TH OCTET (2)
IP Address (Binary)	11000000	10101000	00000001	00000010
Subnet Mask (Binary)	**11111111**	**11111111**	**11111111**	00000000
Network Number	**11000000**	**10101000**	**00000001**	
Host ID				00000010

By convention, subnet masks always consist of a continuous sequence of ones beginning from the leftmost bit of the mask, followed by a continuous sequence of zeros, for a total number of 32 bits.

Subnet masks can be referred to by the size of the network number part (the bits with a "1" value). For example, an "8-bit mask" means that the first 8 bits of the mask are ones and the remaining 24 bits are zeroes.

Subnet masks are expressed in dotted decimal notation just like IP addresses. The following examples show the binary and decimal notation for 8-bit, 16-bit, 24-bit and 29-bit subnet masks.

Table 173 Subnet Masks

	BINARY				DECIMAL
	1ST OCTET	2ND OCTET	3RD OCTET	4TH OCTET	
8-bit mask	11111111	00000000	00000000	00000000	255.0.0.0
16-bit mask	11111111	11111111	00000000	00000000	255.255.0.0
24-bit mask	11111111	11111111	11111111	00000000	255.255.255.0
29-bit mask	11111111	11111111	11111111	11111000	255.255.255.248

Network Size

The size of the network number determines the maximum number of possible hosts you can have on your network. The larger the number of network number bits, the smaller the number of remaining host ID bits.

An IP address with host IDs of all zeros is the IP address of the network (192.168.1.0 with a 24-bit subnet mask, for example). An IP address with host IDs of all ones is the broadcast address for that network (192.168.1.255 with a 24-bit subnet mask, for example).

As these two IP addresses cannot be used for individual hosts, calculate the maximum number of possible hosts in a network as follows:

Table 174 Maximum Host Numbers

SUBNET MASK		HOST ID SIZE		MAXIMUM NUMBER OF HOSTS
8 bits	255.0.0.0	24 bits	$2^{24} – 2$	16777214
16 bits	255.255.0.0	16 bits	$2^{16} – 2$	65534
24 bits	255.255.255.0	8 bits	$2^{8} – 2$	254
29 bits	255.255.255.248	3 bits	$2^{3} – 2$	6

Notation

Since the mask is always a continuous number of ones beginning from the left, followed by a continuous number of zeros for the remainder of the 32 bit mask, you can simply specify the number of ones instead of writing the value of each octet. This is usually specified by writing a “/” followed by the number of bits in the mask after the address.

For example, 192.1.1.0 /25 is equivalent to saying 192.1.1.0 with subnet mask 255.255.255.128.

The following table shows some possible subnet masks using both notations.

Table 175 Alternative Subnet Mask Notation

SUBNET MASK	ALTERNATIVE NOTATION	LAST OCTET (BINARY)	LAST OCTET (DECIMAL)
255.255.255.0	/24	0000 0000	0
255.255.255.128	/25	1000 0000	128

Table 175 Alternative Subnet Mask Notation (continued)

SUBNET MASK	ALTERNATIVE NOTATION	LAST OCTET (BINARY)	LAST OCTET (DECIMAL)
255.255.255.192	/26	1100 0000	192
255.255.255.224	/27	1110 0000	224
255.255.255.240	/28	1111 0000	240
255.255.255.248	/29	1111 1000	248
255.255.255.252	/30	1111 1100	252

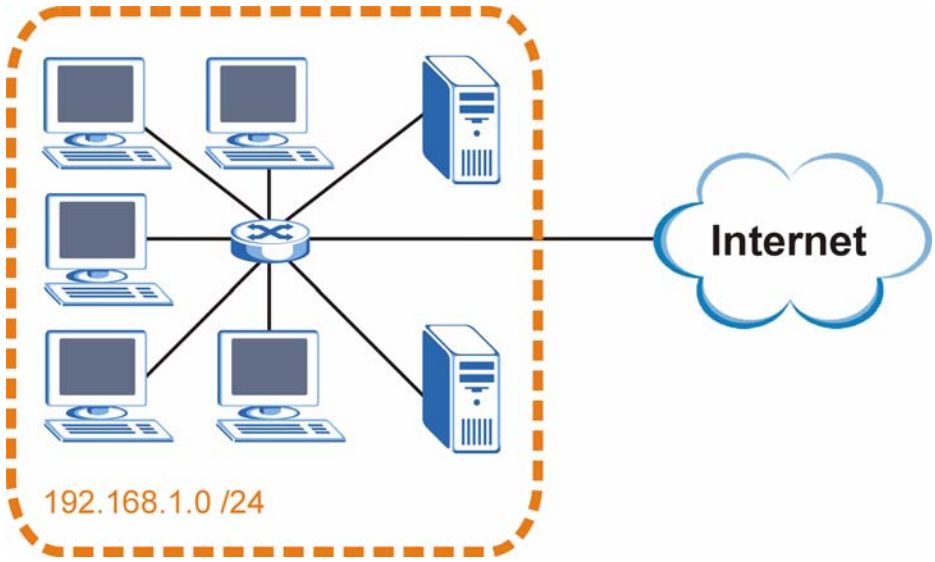
Subnetting

You can use subnetting to divide one network into multiple sub-networks. In the following example a network administrator creates two sub-networks to isolate a group of servers from the rest of the company network for security reasons.

In this example, the company network address is 192.168.1.0. The first three octets of the address (192.168.1) are the network number, and the remaining octet is the host ID, allowing a maximum of $2^8 - 2$ or 254 possible hosts.

The following figure shows the company network before subnetting.

Figure 224 Subnetting Example: Before Subnetting

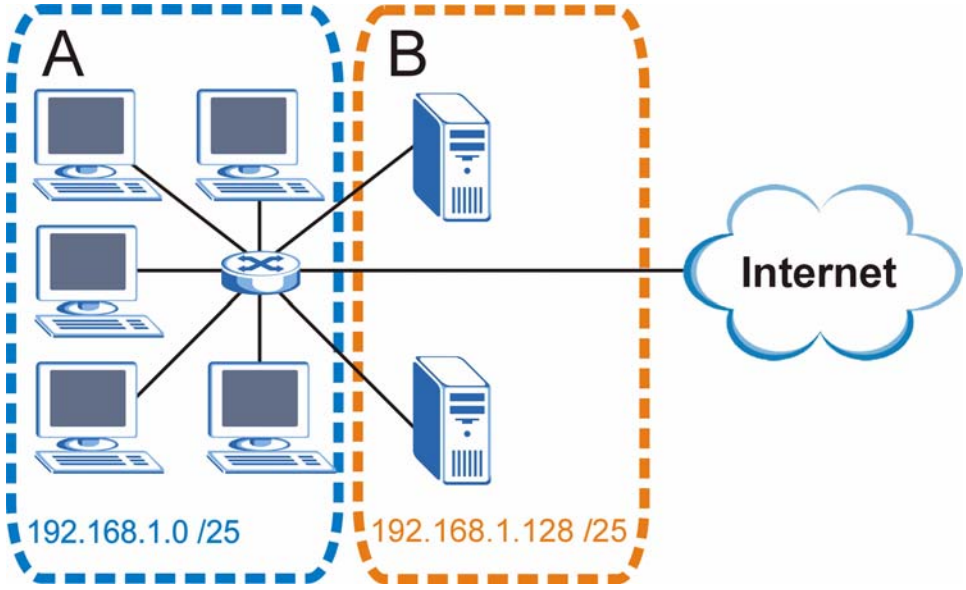


You can “borrow” one of the host ID bits to divide the network 192.168.1.0 into two separate sub-networks. The subnet mask is now 25 bits (255.255.255.128 or /25).

The “borrowed” host ID bit can have a value of either 0 or 1, allowing two subnets; 192.168.1.0 /25 and 192.168.1.128 /25.

The following figure shows the company network after subnetting. There are now two sub-networks, **A** and **B**.

Figure 225 Subnetting Example: After Subnetting



In a 25-bit subnet the host ID has 7 bits, so each sub-network has a maximum of $2^7 - 2$ or 126 possible hosts (a host ID of all zeroes is the subnet's address itself, all ones is the subnet's broadcast address).

192.168.1.0 with mask 255.255.255.128 is subnet **A** itself, and 192.168.1.127 with mask 255.255.255.128 is its broadcast address. Therefore, the lowest IP address that can be assigned to an actual host for subnet **A** is 192.168.1.1 and the highest is 192.168.1.126.

Similarly, the host ID range for subnet **B** is 192.168.1.129 to 192.168.1.254.

Example: Four Subnets

The previous example illustrated using a 25-bit subnet mask to divide a 24-bit address into two subnets. Similarly, to divide a 24-bit address into four subnets, you need to "borrow" two host ID bits to give four possible combinations (00, 01, 10 and 11). The subnet mask is 26 bits (11111111.11111111.11111111.**11**000000) or 255.255.255.192.

Each subnet contains 6 host ID bits, giving 2^6 - 2 or 62 hosts for each subnet (a host ID of all zeroes is the subnet itself, all ones is the subnet's broadcast address).

Table 176 Subnet 1

IP/SUBNET MASK	NETWORK NUMBER	LAST OCTET BIT VALUE
IP Address (Decimal)	192.168.1.	0
IP Address (Binary)	11000000.10101000.00000001.	**00**000000
Subnet Mask (Binary)	11111111.11111111.11111111.	**11**000000
Subnet Address: 192.168.1.0	Lowest Host ID: 192.168.1.1	
Broadcast Address: 192.168.1.63	Highest Host ID: 192.168.1.62	

Table 177 Subnet 2

IP/SUBNET MASK	NETWORK NUMBER	LAST OCTET BIT VALUE
IP Address	192.168.1.	64
IP Address (Binary)	11000000.10101000.00000001.	**01**000000
Subnet Mask (Binary)	11111111.11111111.11111111.	**11**000000
Subnet Address: 192.168.1.64	Lowest Host ID: 192.168.1.65	
Broadcast Address: 192.168.1.127	Highest Host ID: 192.168.1.126	

Table 178 Subnet 3

IP/SUBNET MASK	NETWORK NUMBER	LAST OCTET BIT VALUE
IP Address	192.168.1.	128
IP Address (Binary)	11000000.10101000.00000001.	**10**000000
Subnet Mask (Binary)	11111111.11111111.11111111.	**11**000000
Subnet Address: 192.168.1.128	Lowest Host ID: 192.168.1.129	
Broadcast Address: 192.168.1.191	Highest Host ID: 192.168.1.190	

Table 179 Subnet 4

IP/SUBNET MASK	NETWORK NUMBER	LAST OCTET BIT VALUE
IP Address	192.168.1.	192
IP Address (Binary)	11000000.10101000.00000001.	**11**000000
Subnet Mask (Binary)	11111111.11111111.11111111.	**11**000000
Subnet Address: 192.168.1.192	Lowest Host ID: 192.168.1.193	
Broadcast Address: 192.168.1.255	Highest Host ID: 192.168.1.254	

Example: Eight Subnets

Similarly, use a 27-bit mask to create eight subnets (000, 001, 010, 011, 100, 101, 110 and 111).

The following table shows IP address last octet values for each subnet.

Table 180 Eight Subnets

SUBNET	SUBNET ADDRESS	FIRST ADDRESS	LAST ADDRESS	BROADCAST ADDRESS
1	0	1	30	31
2	32	33	62	63
3	64	65	94	95
4	96	97	126	127

Table 180 Eight Subnets (continued)

SUBNET	SUBNET ADDRESS	FIRST ADDRESS	LAST ADDRESS	BROADCAST ADDRESS
5	128	129	158	159
6	160	161	190	191
7	192	193	222	223
8	224	225	254	255

Subnet Planning

The following table is a summary for subnet planning on a network with a 24-bit network number.

Table 181 24-bit Network Number Subnet Planning

NO. "BORROWED" HOST BITS	SUBNET MASK	NO. SUBNETS	NO. HOSTS PER SUBNET
1	255.255.255.128 (/25)	2	126
2	255.255.255.192 (/26)	4	62
3	255.255.255.224 (/27)	8	30
4	255.255.255.240 (/28)	16	14
5	255.255.255.248 (/29)	32	6
6	255.255.255.252 (/30)	64	2
7	255.255.255.254 (/31)	128	1

The following table is a summary for subnet planning on a network with a 16-bit network number.

Table 182 16-bit Network Number Subnet Planning

NO. "BORROWED" HOST BITS	SUBNET MASK	NO. SUBNETS	NO. HOSTS PER SUBNET
1	255.255.128.0 (/17)	2	32766
2	255.255.192.0 (/18)	4	16382
3	255.255.224.0 (/19)	8	8190
4	255.255.240.0 (/20)	16	4094
5	255.255.248.0 (/21)	32	2046
6	255.255.252.0 (/22)	64	1022
7	255.255.254.0 (/23)	128	510
8	255.255.255.0 (/24)	256	254
9	255.255.255.128 (/25)	512	126
10	255.255.255.192 (/26)	1024	62
11	255.255.255.224 (/27)	2048	30
12	255.255.255.240 (/28)	4096	14
13	255.255.255.248 (/29)	8192	6

Table 182 16-bit Network Number Subnet Planning (continued)

NO. "BORROWED" HOST BITS	SUBNET MASK	NO. SUBNETS	NO. HOSTS PER SUBNET
14	255.255.255.252 (/30)	16384	2
15	255.255.255.254 (/31)	32768	1

Configuring IP Addresses

Where you obtain your network number depends on your particular situation. If the ISP or your network administrator assigns you a block of registered IP addresses, follow their instructions in selecting the IP addresses and the subnet mask.

If the ISP did not explicitly give you an IP network number, then most likely you have a single user account and the ISP will assign you a dynamic IP address when the connection is established. If this is the case, it is recommended that you select a network number from 192.168.0.0 to 192.168.255.0. The Internet Assigned Number Authority (IANA) reserved this block of addresses specifically for private use; please do not use any other number unless you are told otherwise. You must also enable Network Address Translation (NAT) on the device.

Once you have decided on the network number, pick an IP address for your device that is easy to remember (for instance, 192.168.1.1) but make sure that no other device on your network is using that IP address.

The subnet mask specifies the network number portion of an IP address. Your device will compute the subnet mask automatically based on the IP address that you entered. You don't need to change the subnet mask computed by the device unless you are instructed to do otherwise.

Private IP Addresses

Every machine on the Internet must have a unique address. If your networks are isolated from the Internet (running only between two branch offices, for example) you can assign any IP addresses to the hosts without problems. However, the Internet Assigned Numbers Authority (IANA) has reserved the following three blocks of IP addresses specifically for private networks:

- 10.0.0.0 — 10.255.255.255
- 172.16.0.0 — 172.31.255.255
- 192.168.0.0 — 192.168.255.255

You can obtain your IP address from the IANA, from an ISP, or it can be assigned from a private network. If you belong to a small organization and your Internet access is through an ISP, the ISP can provide you with the Internet addresses for your local networks. On the other hand, if you are part of a much larger organization, you should consult your network administrator for the appropriate IP addresses.

Regardless of your particular situation, do not create an arbitrary IP address; always follow the guidelines above. For more information on address assignment, please refer to RFC 1597, *Address Allocation for Private Internets* and RFC 1466, *Guidelines for Management of IP Address Space.*

E

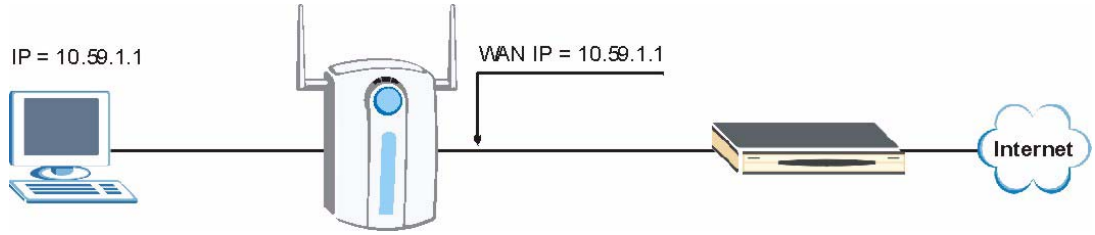
IP Address Assignment Conflicts

This appendix describes situations where IP address conflicts may occur. Subscribers with duplicate IP addresses will not be able to access the Internet.

Case A: The device is using the same LAN and WAN IP addresses

The following figure shows an example where the device is using a WAN IP address that is the same as the IP address of a computer on the LAN.

Figure 226 IP Address Conflicts: Case A

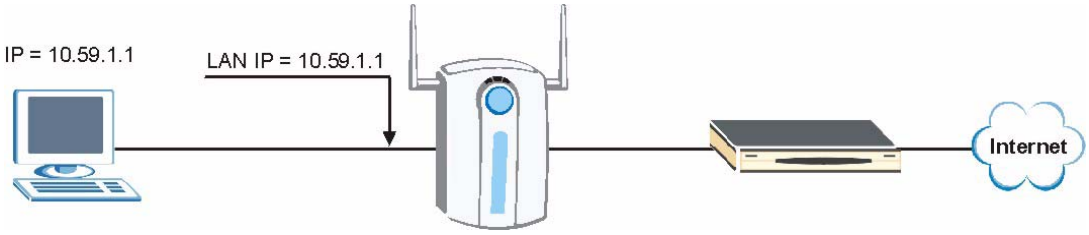


You must set the device to use different LAN and WAN IP addresses on different subnets if you enable DHCP server on the device. For example, you set the WAN IP address to 192.59.1.1 and the LAN IP address to 10.59.1.1. Otherwise, It is recommended the device use a public WAN IP address.

Case B: The Device LAN IP address conflicts with the DHCP client IP address

In the following figure, the device is acting as a DHCP server. The device assigns an IP address, which is the same as its LAN port IP address, to a DHCP client attached to the LAN.

Figure 227 IP Address Conflicts: Case B

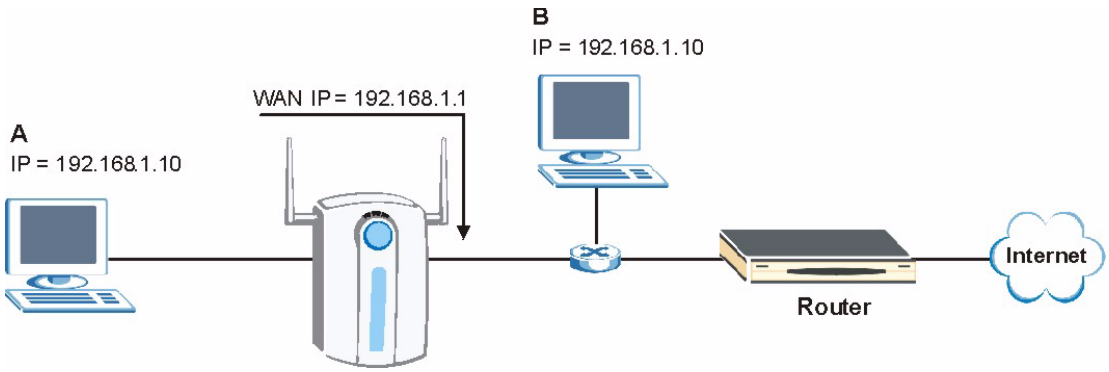


To solve this problem, make sure the device LAN IP address is not in the DHCP IP address pool.

Case C: The Subscriber IP address is the same as the IP address of a network device

The following figure depicts an example where the subscriber IP address is the same as the IP address of a network device not attached to the device.

Figure 228 IP Address Conflicts: Case C



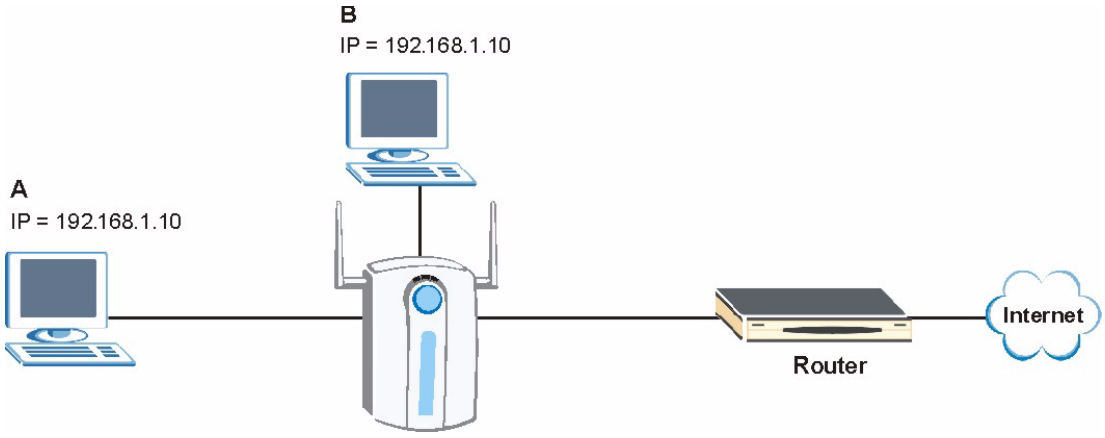
You must set the device to use different LAN and WAN IP addresses on different subnets if you enable DHCP server on the device. For example, you set the WAN IP address to 192.59.1.1 and the LAN IP address to 10.59.1.1. Otherwise, It is recommended the device uses a public WAN IP address.

Case D: Two or more subscribers have the same IP address.

By converting all private IP addresses to the WAN IP address, the device allows subscribers with different network configurations to access the Internet. However, there are situations where two or more subscribers are using the same private IP address. This may happen when a subscriber is configured to use a static (or fixed) IP address that is the same as the IP address the device DHCP server assigns to another subscriber acting as a DHCP client.

In this case, the subscribers are not able to access the Internet.

Figure 229 IP Address Conflicts: Case D



This problem can be solved by adding a VLAN-enabled switch or set the computers to obtain IP addresses dynamically.

F

Common Services

The following table lists some commonly-used services and their associated protocols and port numbers. For a comprehensive list of port numbers, ICMP type/code numbers and services, visit the IANA (Internet Assigned Number Authority) web site.

- **Name**: This is a short, descriptive name for the service. You can use this one or create a different one, if you like.
- **Protocol**: This is the type of IP protocol used by the service. If this is **TCP/UDP**, then the service uses the same port number with TCP and UDP. If this is **USER-DEFINED**, the **Port(s)** is the IP protocol number, not the port number.
- **Port(s)**: This value depends on the **Protocol**. Please refer to RFC 1700 for further information about port numbers.
  - If the **Protocol** is **TCP**, **UDP**, or **TCP/UDP**, this is the IP port number.
  - If the **Protocol** is **USER**, this is the IP protocol number.
- **Description**: This is a brief explanation of the applications that use this service or the situations in which this service is used.

Table 183 Commonly Used Services

NAME	PROTOCOL	PORT(S)	DESCRIPTION
AH (IPSEC_TUNNEL)	User-Defined	51	The IPSEC AH (Authentication Header) tunneling protocol uses this service.
AIM/New-ICQ	TCP	5190	AOL's Internet Messenger service. It is also used as a listening port by ICQ.
AUTH	TCP	113	Authentication protocol used by some servers.
BGP	TCP	179	Border Gateway Protocol.
BOOTP_CLIENT	UDP	68	DHCP Client.
BOOTP_SERVER	UDP	67	DHCP Server.
CU-SEEME	TCP UDP	7648 24032	A popular videoconferencing solution from White Pines Software.
DNS	TCP/UDP	53	Domain Name Server, a service that matches web names (for example www.zyxel.com) to IP numbers.
ESP (IPSEC_TUNNEL)	User-Defined	50	The IPSEC ESP (Encapsulation Security Protocol) tunneling protocol uses this service.
FINGER	TCP	79	Finger is a UNIX or Internet related command that can be used to find out if a user is logged on.

Table 183 Commonly Used Services (continued)

NAME	PROTOCOL	PORT(S)	DESCRIPTION
FTP	TCP TCP	20 21	File Transfer Program, a program to enable fast transfer of files, including large files that may not be possible by e-mail.
H.323	TCP	1720	NetMeeting uses this protocol.
HTTP	TCP	80	Hyper Text Transfer Protocol - a client/ server protocol for the world wide web.
HTTPS	TCP	443	HTTPS is a secured http session often used in e-commerce.
ICMP	User-Defined	1	Internet Control Message Protocol is often used for diagnostic or routing purposes.
ICQ	UDP	4000	This is a popular Internet chat program.
IGMP (MULTICAST)	User-Defined	2	Internet Group Multicast Protocol is used when sending packets to a specific group of hosts.
IKE	UDP	500	The Internet Key Exchange algorithm is used for key distribution and management.
IRC	TCP/UDP	6667	This is another popular Internet chat program.
MSN Messenger	TCP	1863	Microsoft Networks' messenger service uses this protocol.
NEW-ICQ	TCP	5190	An Internet chat program.
NEWS	TCP	144	A protocol for news groups.
NFS	UDP	2049	Network File System - NFS is a client/ server distributed file service that provides transparent file sharing for network environments.
NNTP	TCP	119	Network News Transport Protocol is the delivery mechanism for the USENET newsgroup service.
PING	User-Defined	1	Packet INternet Groper is a protocol that sends out ICMP echo requests to test whether or not a remote host is reachable.
POP3	TCP	110	Post Office Protocol version 3 lets a client computer get e-mail from a POP3 server through a temporary connection (TCP/IP or other).
PPTP	TCP	1723	Point-to-Point Tunneling Protocol enables secure transfer of data over public networks. This is the control channel.
PPTP_TUNNEL (GRE)	User-Defined	47	PPTP (Point-to-Point Tunneling Protocol) enables secure transfer of data over public networks. This is the data channel.
RCMD	TCP	512	Remote Command Service.
REAL_AUDIO	TCP	7070	A streaming audio service that enables real time sound over the web.
REXEC	TCP	514	Remote Execution Daemon.
RLOGIN	TCP	513	Remote Login.
RTELNET	TCP	107	Remote Telnet.

Table 183 Commonly Used Services (continued)

NAME	PROTOCOL	PORT(S)	DESCRIPTION
RTSP	TCP/UDP	554	The Real Time Streaming (media control) Protocol (RTSP) is a remote control for multimedia on the Internet.
SFTP	TCP	115	Simple File Transfer Protocol.
SMTP	TCP	25	Simple Mail Transfer Protocol is the message-exchange standard for the Internet. SMTP enables you to move messages from one e-mail server to another.
SNMP	TCP/UDP	161	Simple Network Management Program.
SNMP-TRAPS	TCP/UDP	162	Traps for use with the SNMP (RFC:1215).
SQL-NET	TCP	1521	Structured Query Language is an interface to access data on many different types of database systems, including mainframes, midrange systems, UNIX systems and network servers.
SSH	TCP/UDP	22	Secure Shell Remote Login Program.
STRM WORKS	UDP	1558	Stream Works Protocol.
SYSLOG	UDP	514	Syslog allows you to send system logs to a UNIX server.
TACACS	UDP	49	Login Host Protocol used for (Terminal Access Controller Access Control System).
TELNET	TCP	23	Telnet is the login and terminal emulation protocol common on the Internet and in UNIX environments. It operates over TCP/IP networks. Its primary function is to allow users to log into remote host systems.
TFTP	UDP	69	Trivial File Transfer Protocol is an Internet file transfer protocol similar to FTP, but uses the UDP (User Datagram Protocol) rather than TCP (Transmission Control Protocol).
VDOLIVE	TCP	7000	Another videoconferencing solution.

G

Importing Certificates

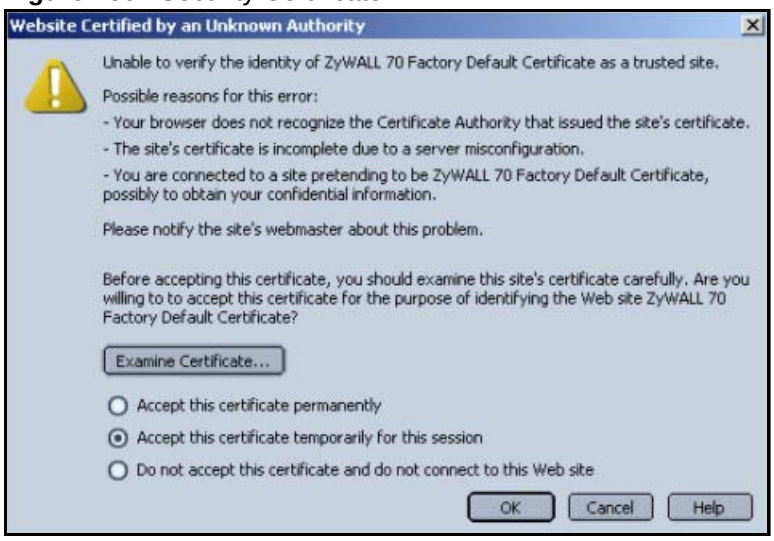
This appendix shows importing certificates examples using Internet Explorer 5.

Import Vantage CNM Certificates into Netscape Navigator

In Netscape Navigator, you can permanently trust the Vantage CNM's server certificate by importing it into your operating system as a trusted certification authority.

Select **Accept This Certificate Permanently** in the following screen to do this.

Figure 230 Security Certificate


Website Certified by an Unknown Authority
Unable to verify the identity of ZyWALL 70 Factory Default Certificate as a trusted site.
Possible reasons for this error:
- Your browser does not recognize the Certificate Authority that issued the site's certificate.
- The site's certificate is incomplete due to a server misconfiguration.
- You are connected to a site pretending to be ZyWALL 70 Factory Default Certificate, possibly to obtain your confidential information.
Please notify the site's webmaster about this problem.
Before accepting this certificate, you should examine this site's certificate carefully. Are you willing to to accept this certificate for the purpose of identifying the Web site ZyWALL 70 Factory Default Certificate?
Examine Certificate...
Accept this certificate permanently
Accept this certificate temporarily for this session
Do not accept this certificate and do not connect to this Web site
OK
Cancel
Help

Importing the Vantage CNM's Certificate into Internet Explorer

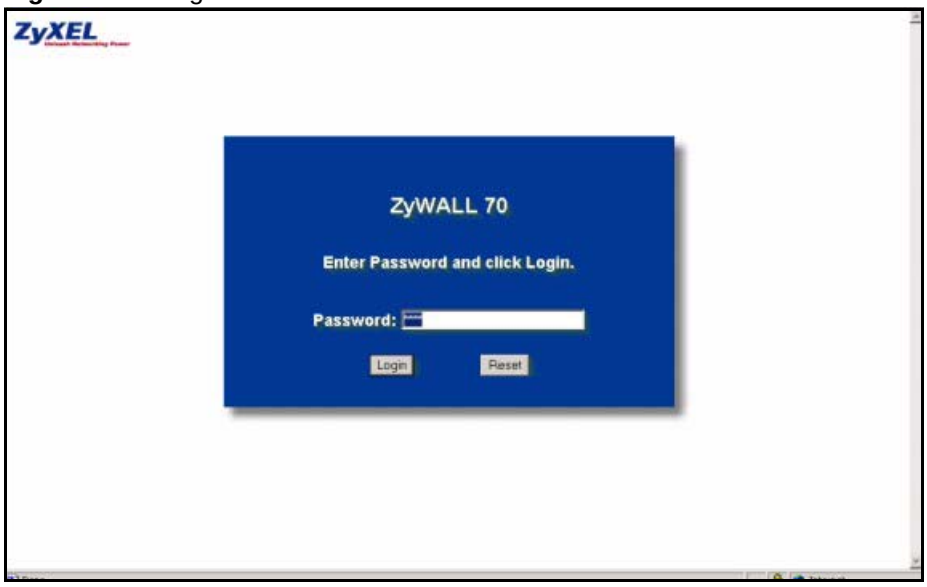
For Internet Explorer to trust a self-signed certificate from Vantage CNM, simply import the self-signed certificate into your operating system as a trusted certification authority.

To have Internet Explorer trust a Vantage CNM certificate issued by a certificate authority, import the certificate authority's certificate into your operating system as a trusted certification authority.

The following example procedure shows how to import the Vantage CNM's (self-signed) server certificate into your operating system as a trusted certification authority.

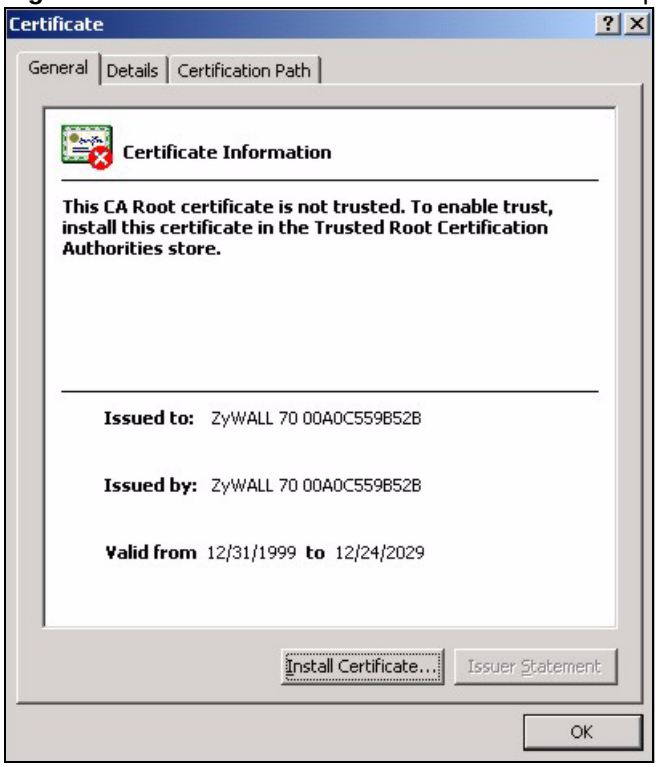
1 In Internet Explorer, double click the lock shown in the following screen.

Figure 231 Login Screen



2 Click **Install Certificate** to open the **Install Certificate** wizard.

Figure 232 Certificate General Information before Import



3 Click **Next** to begin the **Install Certificate** wizard.

Figure 233 Certificate Import Wizard 1

Certificate Import Wizard
Welcome to the Certificate Import Wizard
This wizard helps you copy certificates, certificate trust lists, and certificate revocation lists from your disk to a certificate store.
A certificate, which is issued by a certification authority, is a confirmation of your identity and contains information used to protect data or to establish secure network connections. A certificate store is the system area where certificates are kept.
To continue, click Next.
< Back
Next >
Cancel

4 Select where you would like to store the certificate and then click **Next**.

Figure 234 Certificate Import Wizard 2

Certificate Import Wizard
Certificate Store
Certificate stores are system areas where certificates are kept.
Windows can automatically select a certificate store, or you can specify a location for
Automatically select the certificate store based on the type of certificate
Place all certificates in the following store
Certificate store:
Browse...
< Back
Next >
Cancel

5 Click **Finish** to complete the **Import Certificate** wizard.

Figure 235 Certificate Import Wizard 3

6 Click **Yes** to add the Vantage CNM certificate to the root store.

Figure 236 Root Certificate Store

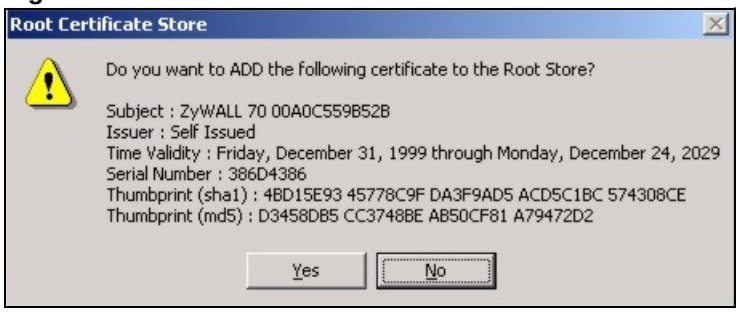
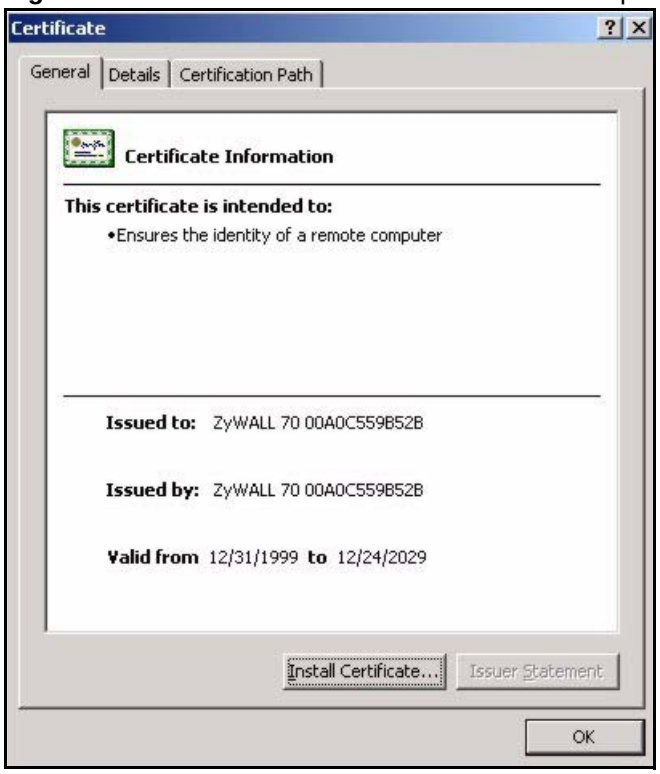

Root Certificate Store
Do you want to ADD the following certificate to the Root Store?
Subject : ZyWALL 70 00A0C559B52B
Issuer : Self Issued
Time Validity : Friday, December 31, 1999 through Monday, December 24, 2029
Serial Number : 386D4386
Thumbprint (sha1) : 4BD15E93 45778C9F DA3F9AD5 ACD5C1BC 574308CE
Thumbprint (md5) : D3458DB5 CC3748BE AB50CF81 A79472D2
Yes
No

Figure 237 Certificate General Information after Import



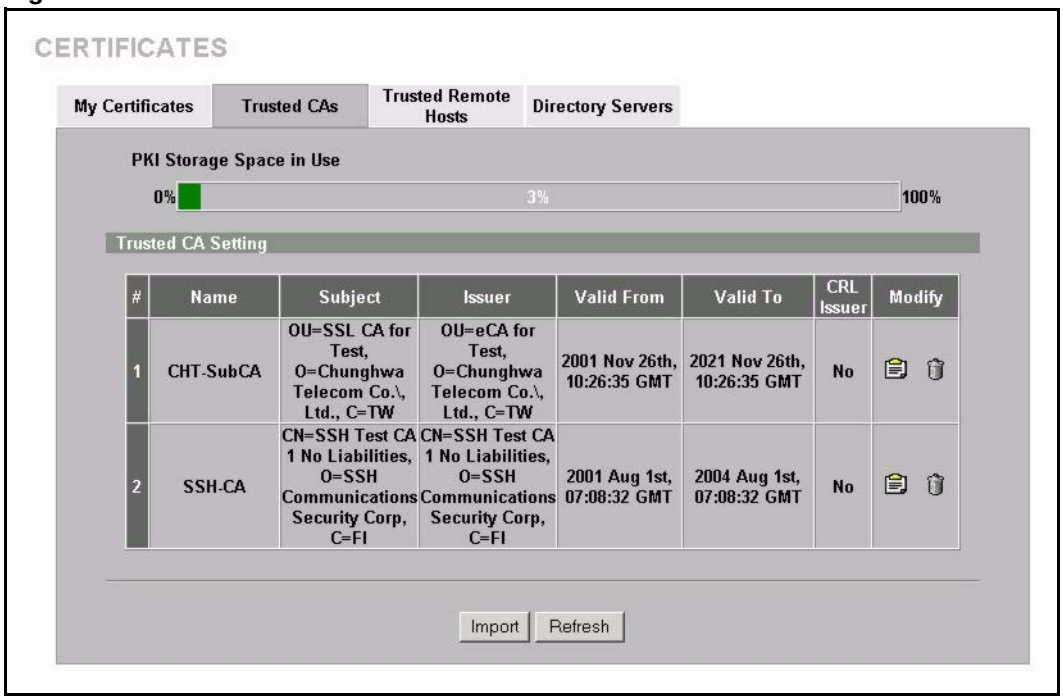
Enrolling and Importing SSL Client Certificates

The SSL client needs a certificate if **Authenticate Client Certificates** is selected on the device.

You must have imported at least one trusted CA to the device in order for the **Authenticate Client Certificates** to be active (see the Certificates chapter for details).

Apply for a certificate from a Certification Authority (CA) that is trusted by the device (see the device's **Trusted CA** web configurator screen).

Figure 238 Device's Trusted CA Screen

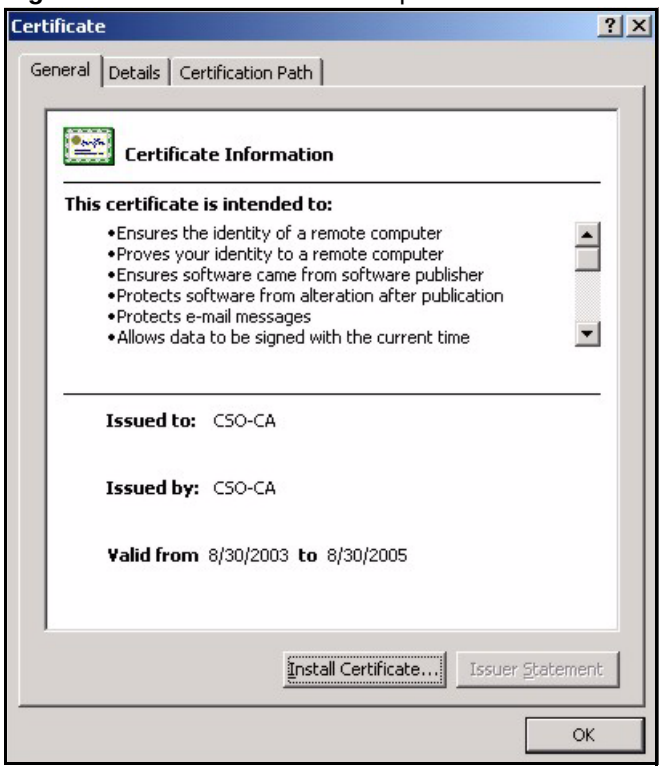

CERTIFICATES
My Certificates
Trusted CAs
Trusted Remote Hosts
Directory Servers
PKI Storage Space in Use
0%
3%
100%
Trusted CA Setting
Name Subject Issuer Valid From Valid To CRL Issuer Modify
1 CHT-SubCA OU=SSL CA for Test, O=Chunghwa Telecom Co.\, Ltd., C=TW OU=eCA for Test, O=Chunghwa Telecom Co.\, Ltd., C=TW 2001 Nov 26th, 10:26:35 GMT 2021 Nov 26th, 10:26:35 GMT No
2 SSH-CA CN=SSH Test CA 1 No Liabilities, O=SSH Communications Security Corp, C=FI CN=SSH Test CA 1 No Liabilities, O=SSH Communications Security Corp, C=FI 2001 Aug 1st, 07:08:32 GMT 2004 Aug 1st, 07:08:32 GMT No
Import
Refresh

The CA sends you a package containing the CA's trusted certificate(s), your personal certificate(s) and a password to install the personal certificate(s).

Installing the CA's Certificate

1 Double click the CA's trusted certificate to produce a screen similar to the one shown next.

Figure 239 CA Certificate Example



2 Click **Install Certificate** and follow the wizard as shown earlier in this appendix.

Installing Your Personal Certificate(s)

You need a password in advance. The CA may issue the password or you may have to specify it during the enrollment. Double-click the personal certificate given to you by the CA to produce a screen similar to the one shown next

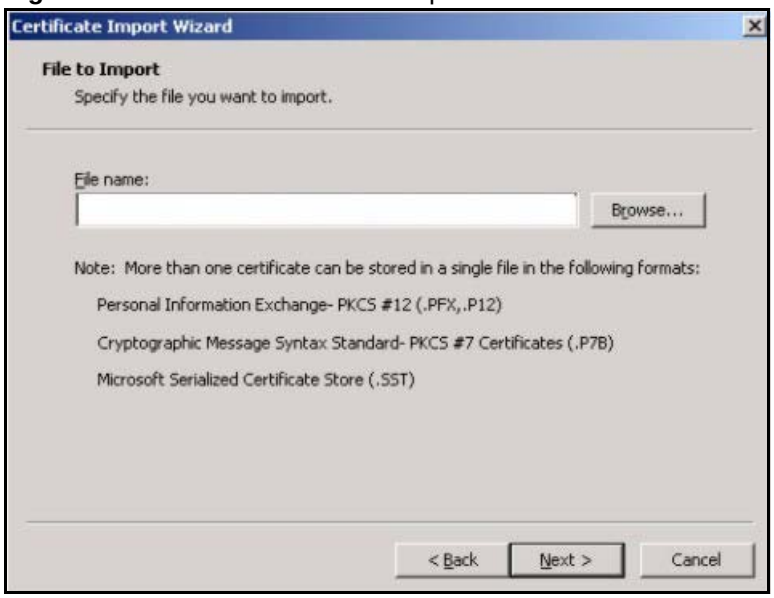
1 Click **Next** to begin the wizard.

Figure 240 Personal Certificate Import Wizard 1

Certificate Import Wizard
Welcome to the Certificate Import Wizard
This wizard helps you copy certificates, certificate trust lists, and certificate revocation lists from your disk to a certificate store.
A certificate, which is issued by a certification authority, is a confirmation of your identity and contains information used to protect data or to establish secure network connections. A certificate store is the system area where certificates are kept.
To continue, click Next.
< Back
Next >
Cancel

2 The file name and path of the certificate you double-clicked should automatically appear in the **File name** text box. Click **Browse** if you wish to import a different certificate.

Figure 241 Personal Certificate Import Wizard 2


Certificate Import Wizard
File to Import
Specify the file you want to import.
File name:
Browse...
Note: More than one certificate can be stored in a single file in the following formats:
Personal Information Exchange- PKCS #12 (.PFX,.P12)
Cryptographic Message Syntax Standard- PKCS #7 Certificates (.P7B)
Microsoft Serialized Certificate Store (.SST)
< Back
Next >
Cancel

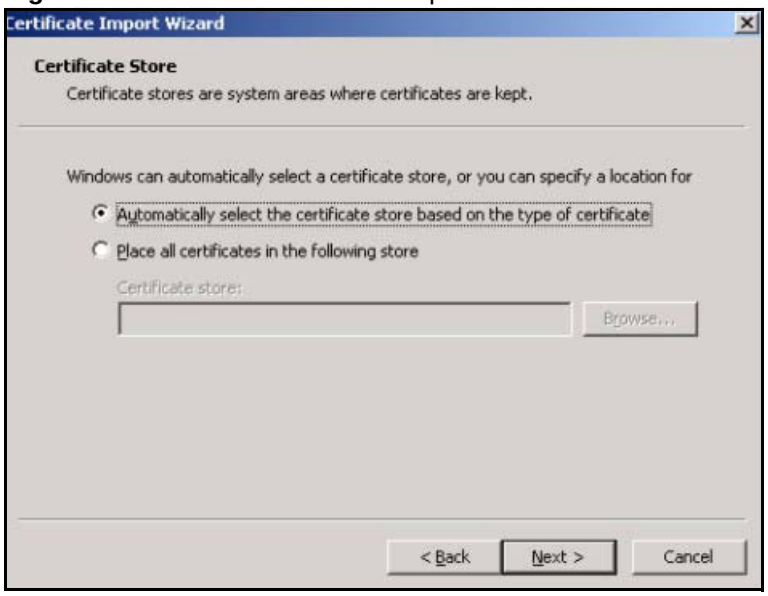
3 Enter the password given to you by the CA.

Figure 242 Personal Certificate Import Wizard 3

Certificate Import Wizard
Password
To maintain security, the private key was protected with a password.
Type the password for the private key.
Password:
Enable strong private key protection. You will be prompted every time the private key is used by an application if you enable this option.
Mark the private key as exportable
< Back
Next >
Cancel

4 Have the wizard determine where the certificate should be saved on your computer or select **Place all certificates in the following store** and choose a different location.

Figure 243 Personal Certificate Import Wizard 4


Certificate Import Wizard
Certificate Store
Certificate stores are system areas where certificates are kept.
Windows can automatically select a certificate store, or you can specify a location for
Automatically select the certificate store based on the type of certificate
Place all certificates in the following store
Certificate store:
Browse...
< Back
Next >
Cancel

5 Click **Finish** to complete the wizard and begin the import process.

Figure 244 Personal Certificate Import Wizard 5

6 You should see the following screen when the certificate is correctly installed on your computer.

Figure 245 Personal Certificate Import Wizard 6

Using a Certificate When Accessing the Device Example

Use the following procedure to access the device via HTTPS.

1 Enter ‘https://device IP Address/ in your browser’s web address field.

Figure 246 Access the Device Via HTTPS

about:blank - Microsoft Internet Explorer
File Edit View Favorites Tools Help
Back Search Favorites History
Address https://192.168.1.1

2 When **Authenticate Client Certificates** is selected on the device, the following screen asks you to select a personal certificate to send to the device. This screen displays even if you only have a single certificate as in the example.

Figure 247 SSL Client Authentication

3 You next see the device login screen.

Figure 248 Device Secure Login Screen

H

Open Software Announcements

Notice

Information herein is subject to change without notice. Companies, names, and data used in examples herein are fictitious unless otherwise noted. No part may be reproduced or transmitted in any form or by any means, electronic or mechanical, for any purpose, except the express written permission of ZyXEL Communications Corporation.

This Product includes Castor under below license

Copyright (C) 1999-2001 Intalio, Inc. All Rights Reserved.

Redistribution and use of this software and associated documentation ("Software"), with or without modification, are permitted provided that the following conditions are met:

1. Redistributions of source code must retain copyright statements and notices. Redistributions must also contain a copy of this document.

2. Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.

3. The name "ExoLab" must not be used to endorse or promote products derived from this Software without prior written permission of ExoLab Group. For written permission, please contact info@exolab.org.

4. Products derived from this Software may not be called "ExoLab" nor may "ExoLab" appear in their names without prior written permission of ExoLab Group. Exolab is a registered trademark of ExoLab Group.

5. Due credit should be given to the ExoLab Group (http://www.exolab.org).

THIS SOFTWARE IS PROVIDED BY INTALIO, INC. AND CONTRIBUTORS "AS IS" AND ANY EXPRESSED OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF ERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED.

IN NO EVENT SHALL INTALIO, INC. OR ITS CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

This Product includes ant-contrib 1.0b3 version, axis 1.2.1 version, a[ache-commoms quartz 1.5.2 version, log4j 102014 version, j2sh, xerces 2.8.1 version, apache-any 1.6.5 version, and apache-tomcat 5.0 version under Apache Software License

Apache License

Version 2.0, January 2004

http://www.apache.org/licenses/

TERMS AND CONDITIONS FOR USE, REPRODUCTION, AND DISTRIBUTION

1. Definitions.

"License" shall mean the terms and conditions for use, reproduction, and distribution as defined by Sections 1 through 9 of this document.

"Licensor" shall mean the copyright owner or entity authorized by the copyright owner that is granting the License.

"Legal Entity" shall mean the union of the acting entity and all other entities that control, are controlled by, or are under common control with that entity. For the purposes of this definition, "control" means (i) the power, direct or indirect, to cause the direction or management of such entity, whether by contract or otherwise, or (ii) ownership of fifty percent (50%) or more of the outstanding shares, or (iii) beneficial ownership of such entity.

"You" (or "Your") shall mean an individual or Legal Entity exercising permissions granted by this License.

"Source" form shall mean the preferred form for making modifications, including but not limited to software source code, documentation source, and configuration files.

"Object" form shall mean any form resulting from mechanical transformation or translation of a Source form, including but not limited to compiled object code, generated documentation, and conversions to other media types.

"Work" shall mean the work of authorship, whether in Source or Object form, made available under the License, as indicated by a copyright notice that is included in or attached to the work (an example is provided in the Appendix below).

"Derivative Works" shall mean any work, whether in Source or Object form, that is based on (or derived from) the Work and for which the editorial revisions, annotations, elaborations, or other modifications represent, as a whole, an original work of authorship. For the purposes of this License, Derivative Works shall not include works that remain separable from, or merely link (or bind by name) to the interfaces of, the Work and Derivative Works thereof.

"Contribution" shall mean any work of authorship, including the original version of the Work and any modifications or additions to that Work or Derivative Works thereof, that is intentionally submitted to Licensor for inclusion in the Work by the copyright owner or by an individual or Legal Entity authorized to submit on behalf of the copyright owner. For the purposes of this definition, "submitted" means any form of electronic, verbal, or written communication sent to the Licensor or its representatives, including but not limited to communication on electronic mailing lists, source code control systems, and issue tracking systems that are managed by, or on behalf of, the Licensor for the purpose of discussing and improving the Work, but excluding communication that is conspicuously marked or otherwise designated in writing by the copyright owner as "Not a Contribution."

"Contributor" shall mean Licensor and any individual or Legal Entity on behalf of whom a Contribution has been received by Licensor and subsequently incorporated within the Work.

2. Grant of Copyright License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable copyright license to reproduce, prepare Derivative Works of, publicly display, publicly perform, sublicense, and distribute the Work and such Derivative Works in Source or Object form.

3. Grant of Patent License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable (except as stated in this section) patent license to make, have made, use, offer to sell, sell, import, and otherwise transfer the Work, where such license applies only to those patent claims licensable by such Contributor that are necessarily infringed by their Contribution(s) alone or by combination of their Contribution(s) with the Work to which such Contribution(s) was submitted. If You institute patent litigation against any entity (including a cross-claim or counterclaim in a lawsuit) alleging that the Work or a Contribution incorporated within the Work constitutes direct or contributory patent infringement, then any patent licenses granted to You under this License for that Work shall terminate as of the date such litigation is filed.

4. Redistribution. You may reproduce and distribute copies of the Work or Derivative Works hereof in any medium, with or without modifications, and in Source or Object form, provided that You meet the following conditions:

(a) You must give any other recipients of the Work or Derivative Works a copy of this License; and

(b) You must cause any modified files to carry prominent notices stating that You changed the files; and

(c) You must retain, in the Source form of any Derivative Works that You distribute, all copyright, patent, trademark, and attribution notices from the Source form of the Work, excluding those notices that do not pertain to any part of the Derivative Works; and

(d) If the Work includes a "NOTICE" text file as part of its distribution, then any Derivative Works that You distribute must include a readable copy of the attribution notices contained within such NOTICE file, excluding those notices that do not pertain to any part of the Derivative Works, in at least one of the following places: within a NOTICE text file distributed as part of the Derivative Works; within the Source form or documentation, if provided along with the Derivative Works; or, within a display generated by the Derivative Works, if and wherever such third-party notices normally appear. The contents of the NOTICE file are for informational purposes only and do not modify the License. You may add Your own attribution notices within Derivative Works that You distribute, alongside or as an addendum to the NOTICE text from the Work, provided that such additional attribution notices cannot be construed as modifying the License. You may add Your own copyright statement to Your modifications and may provide additional or different license terms and conditions for use, reproduction, or distribution of Your modifications, or for any such Derivative Works as a whole, provided Your use, reproduction, and distribution of the Work otherwise complies with the conditions stated in this License.

5. Submission of Contributions. Unless You explicitly state otherwise, any Contribution intentionally submitted for inclusion in the Work by You to the Licensor shall be under the terms and conditions of this License, without any additional terms or conditions. Notwithstanding the above, nothing herein shall supersede or modify the terms of any separate license agreement you may have executed with Licensor regarding such Contributions.

6. Trademarks. This License does not grant permission to use the trade names, trademarks, service marks, or product names of the Licensor, except as required for reasonable and customary use in describing the origin of the Work and reproducing the content of the NOTICE file.

7. Disclaimer of Warranty. Unless required by applicable law or agreed to in writing, Licensor provides the Work (and each Contributor provides its Contributions) on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied, including, without limitation, any warranties or conditions of TITLE, NON-INFRINGEMENT, MERCHANTABILITY, or FITNESS FOR A PARTICULAR PURPOSE. You are solely responsible for determining the appropriateness of using or redistributing the Work and assume any risks associated with Your exercise of permissions under this License.

8. Limitation of Liability. In no event and under no legal theory, whether in tort (including negligence), contract, or otherwise, unless required by applicable law (such as deliberate and grossly negligent acts) or agreed to in writing, shall any Contributor be liable to You for damages, including any direct, indirect, special, incidental, or consequential damages of any character arising as a result of this License or out of the use or inability to use the Work (including but not limited to damages for loss of goodwill, work stoppage, computer failure or malfunction, or any and all other commercial damages or losses), even if such Contributor has been advised of the possibility of such damages.

9. Accepting Warranty or Additional Liability. While redistributing the Work or Derivative Works thereof, You may choose to offer, and charge a fee for, acceptance of support, warranty, indemnity, or other liability obligations and/or rights consistent with this License. However, in accepting such obligations, You may act only on Your own behalf and on Your sole responsibility, not on behalf of any other Contributor, and only if You agree to indemnify, defend, and hold each Contributor harmless for any liability incurred by, or claims asserted against, such Contributor by reason of your accepting any such warranty or additional liability.

END OF TERMS AND CONDITIONS

Version 1.1

Copyright (c) 1999-2003 The Apache Software Foundation. All rights reserved.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.

Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.

The end-user documentation included with the redistribution, if any, must include the following acknowledgment: "This product includes software developed by the Apache Software Foundation (http://www.apache.org/)." Alternately, this acknowledgment may appear in the software itself, if and wherever such third-party acknowledgments normally appear.

The names "Apache" and "Apache Software Foundation" must not be used to endorse or promote products derived from this software without prior written permission. For written permission, please contact apache@apache.org.

Products derived from this software may not be called "Apache", nor may "Apache" appear in their name, without prior written permission of the Apache Software Foundation.

THIS SOFTWARE IS PROVIDED ``AS IS'' AND ANY EXPRESSED OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE APACHE SOFTWARE FOUNDATION OR ITS CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

This software consists of voluntary contributions made by many individuals on behalf of the Apache Software Foundation. For more information on the Apache Software Foundation, please see <http://www.apache.org/>.

Portions of this software are based upon public domain software originally written at the National Center for Supercomputing Applications, University of Illinois, Urbana-Champaign.

This Product includes hibernate 3.1.3 version and j2sh under LGPL

Copyright (C) 2002 Lee David Painter. All right reserved

GNU LESSER GENERAL PUBLIC LICENSE

Version 2.1, February 1999

Copyright (C) 1991, 1999 Free Software Foundation, Inc.

59 Temple Place, Suite 330, Boston, MA 02111-1307 USA

Everyone is permitted to copy and distribute verbatim copies of this license document, but changing it is not allowed. [This is the first released version of the Lesser GPL. It also counts as the successor of the GNU Library Public License, version 2, hence the version number 2.1.]

Preamble

The licenses for most software are designed to take away your freedom to share and change it. By contrast, the GNU General Public Licenses are intended to guarantee your freedom to share and change free software--to make sure the software is free for all its users.

This license, the Lesser General Public License, applies to some specially designated software packages--typically libraries--of the Free Software Foundation and other authors who decide to use it. You can use it too, but we suggest you first think carefully about whether this license or the ordinary General Public License is the better strategy to use in any particular case, based on the explanations below.

When we speak of free software, we are referring to freedom of use, not price. Our General Public Licenses are designed to make sure that you have the freedom to distribute copies of free software (and charge for this service if you wish); that you receive source code or can get

it if you want it; that you can change the software and use pieces of it in new free programs; and that you are informed that you can do these things.

To protect your rights, we need to make restrictions that forbid distributors to deny you these rights or to ask you to surrender these rights. These restrictions translate to certain responsibilities for you if you distribute copies of the library or if you modify it.

For example, if you distribute copies of the library, whether gratis or for a fee, you must give the recipients all the rights that we gave you. You must make sure that they, too, receive or can get the source code. If you link other code with the library, you must provide complete object files to the recipients, so that they can relink them with the library after making changes to the library and recompiling it. And you must show them these terms so they know their rights.

We protect your rights with a two-step method: (1) we copyright the library, and (2) we offer you this license, which gives you legal permission to copy, distribute and/or modify the library.

To protect each distributor, we want to make it very clear that there is no warranty for the free library. Also, if the library is modified by someone else and passed on, the recipients should know that what they have is not the original version, so that the original author's reputation will not be affected by problems that might be introduced by others.

Finally, software patents pose a constant threat to the existence of any free program. We wish to make sure that a company cannot effectively restrict the users of a free program by obtaining a restrictive license from a patent holder. Therefore, we insist that any patent license obtained for a version of the library must be consistent with the full freedom of use specified in this license.

Most GNU software, including some libraries, is covered by the ordinary GNU General Public License. This license, the GNU Lesser General Public License, applies to certain designated libraries, and is quite different from the ordinary General Public License. We use this license for certain libraries in order to permit linking those libraries into non-free programs.

When a program is linked with a library, whether statically or using a shared library, the combination of the two is legally speaking a combined work, a derivative of the original library. The ordinary General Public License therefore permits such linking only if the entire combination fits its criteria of freedom. The Lesser General Public License permits more lax criteria for linking other code with the library.

We call this license the "Lesser" General Public License because it does Less to protect the user's freedom than the ordinary General Public License. It also provides other free software developers Less of an advantage over competing non-free programs. These disadvantages are the reason we use the ordinary General Public License for many libraries. However, the Lesser license provides advantages in certain special circumstances.

For example, on rare occasions, there may be a special need to encourage the widest possible use of a certain library, so that it becomes a de-facto standard. To achieve this, non-free programs must be allowed to use the library. A more frequent case is that a free library does the same job as widely used non-free libraries. In this case, there is little to gain by limiting the free library to free software only, so we use the Lesser General Public License. In other cases, permission to use a particular library in non-free programs enables a greater number of people to use a large body of free software. For example, permission to use the GNU C Library in non-free programs enables many more people to use the whole GNU operating system, as well as its variant, the GNU/Linux operating system.

Although the Lesser General Public License is Less protective of the users' freedom, it does ensure that the user of a program that is linked with the Library has the freedom and the wherewithal to run that program using a modified version of the Library.

The precise terms and conditions for copying, distribution and modification follow. Pay close attention to the difference between a "work based on the library" and a "work that uses the library". The former contains code derived from the library, whereas the latter must be combined with the library in order to run.

GNU LESSER GENERAL PUBLIC LICENSE TERMS AND CONDITIONS FOR COPYING, DISTRIBUTION AND MODIFICATION

0. This License Agreement applies to any software library or other program which contains a notice placed by the copyright holder or other authorized party saying it may be distributed under the terms of this Lesser General Public License (also called "this License").

Each licensee is addressed as "you".

A "library" means a collection of software functions and/or data prepared so as to be conveniently linked with application programs (which use some of those functions and data) to form executables. The "Library", below, refers to any such software library or work which has been distributed under these terms. A "work based on the Library" means either the Library or any derivative work under copyright law: that is to say, a work containing the Library or a portion of it, either verbatim or with modifications and/or translated straightforwardly into another language. (Hereinafter, translation is included without limitation in the term "modification".)

"Source code" for a work means the preferred form of the work for making modifications to it. For a library, complete source code means all the source code for all modules it contains, plus any associated interface definition files, plus the scripts used to control compilation and installation of the library. Activities other than copying, distribution and modification are not covered by this License; they are outside its scope. The act of running a program using the Library is not restricted, and output from such a program is covered only if its contents constitute a work based on the Library (independent of the use of the Library in a tool for writing it). Whether that is true depends on what the Library does and what the program that uses the Library does.

1. You may copy and distribute verbatim copies of the Library's complete source code as you receive it, in any medium, provided that you conspicuously and appropriately publish on each copy an appropriate copyright notice and disclaimer of warranty; keep intact all the notices that refer to this License and to the absence of any warranty; and distribute a copy of this License along with the Library. You may charge a fee for the physical act of transferring a copy, and you may at your option offer warranty protection in exchange for a fee.

2. You may modify your copy or copies of the Library or any portion of it, thus forming a work based on the Library, and copy and distribute such modifications or work under the terms of Section 1 above, provided that you also meet all of these conditions: a) The modified work must itself be a software library. b) You must cause the files modified to carry prominent notices stating that you changed the files and the date of any change. c) You must cause the whole of the work to be licensed at no charge to all third parties under the terms of this License. d) If a facility in the modified Library refers to a function or a table of data to be supplied by an application program that uses the facility, other than as an argument passed when the facility is invoked, then you must make a good faith effort to ensure that, in the event an application does not supply such function or table, the facility still operates, and performs whatever part of its purpose remains meaningful. (For example, a function in a library to compute square roots has a purpose that is entirely well-defined independent of the application. Therefore, Subsection 2d requires that any application-supplied function or table used by this function must be optional: if the application does not supply it, the square root

function must still compute square roots.) These requirements apply to the modified work as a whole. If identifiable sections of that work are not derived from the Library, and can be reasonably considered independent and separate works in themselves, then this License, and its terms, do not apply to those sections when you distribute them as separate works. But when you distribute the same sections as part of a whole which is a work based on the Library, the distribution of the whole must be on the terms of this License, whose permissions for other licensees extend to the entire whole, and thus to each and every part regardless of who wrote it. Thus, it is not the intent of this section to claim rights or contest your rights to work written entirely by you; rather, the intent is to exercise the right to control the distribution of derivative or collective works based on the Library. In addition, mere aggregation of another work not based on the Library with the Library (or with a work based on the Library) on a volume of a storage or distribution medium does not bring the other work under the scope of this License.

3. You may opt to apply the terms of the ordinary GNU General Public License instead of this License to a given copy of the Library. To do this, you must alter all the notices that refer to this License, so that they refer to the ordinary GNU General Public License, version 2, instead of to this License. (If a newer version than version 2 of the ordinary GNU General Public License has appeared, then you can specify that version instead if you wish.) Do not make any other change in these notices. Once this change is made in a given copy, it is irreversible for that copy, so the ordinary GNU General Public License applies to all subsequent copies and derivative works made from that copy. This option is useful when you wish to copy part of the code of the Library into a program that is not a library.

4. You may copy and distribute the Library (or a portion or derivative of it, under Section 2) in object code or executable form under the terms of Sections 1 and 2 above provided that you accompany it with the complete corresponding machine-readable source code, which must be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange. If distribution of object code is made by offering access to copy from a designated place, then offering equivalent access to copy the source code from the same place satisfies the requirement to distribute the source code, even though third parties are not compelled to copy the source along with the object code.

5. A program that contains no derivative of any portion of the Library, but is designed to work with the Library by being compiled or linked with it, is called a "work that uses the Library". Such a work, in isolation, is not a derivative work of the Library, and therefore falls outside the scope of this License.

However, linking a "work that uses the Library" with the Library creates an executable that is a derivative of the Library (because it contains portions of the Library), rather than a "work that uses the library". The executable is therefore covered by this License. Section 6 states terms for distribution of such executables. When a "work that uses the Library" uses material from a header file that is part of the Library, the object code for the work may be a derivative work of the Library even though the source code is not. Whether this is true is especially significant if the work can be linked without the Library, or if the work is itself a library. The threshold for this to be true is not precisely defined by law. If such an object file uses only numerical parameters, data structure layouts and accessors, and small macros and small inline functions (ten lines or less in length), then the use of the object file is unrestricted, regardless of whether it is legally a derivative work. (Executables containing this object code plus portions of the Library will still fall under Section 6.) Otherwise, if the work is a derivative of the Library, you may distribute the object code for the work under the terms of Section 6. Any executables containing that work also fall under Section 6, whether or not they are linked directly with the Library itself.

6. As an exception to the Sections above, you may also combine or link a "work that uses the Library" with the Library to produce a work containing portions of the Library, and distribute that work under terms of your choice, provided that the terms permit modification of the work for the customer's own use and reverse engineering for debugging such modifications. You must give prominent notice with each copy of the work that the Library is used in it and that the Library and its use are covered by this License. You must supply a copy of this License. If the work during execution displays copyright notices, you must include the copyright notice for the Library among them, as well as a reference directing the user to the copy of this License. Also, you must do one of these things: a) Accompany the work with the complete corresponding machine-readable source code for the Library including whatever changes were used in the work (which must be distributed under Sections 1 and 2 above); and, if the work is an executable linked with the Library, with the complete machine-readable "work that uses the Library", as object code and/or source code, so that the user can modify the Library and then relink to produce a modified executable containing the modified Library. (It is understood that the user who changes the contents of definitions files in the Library will not necessarily be able to recompile the application to use the modified definitions.) b) Use a suitable shared library mechanism for linking with the Library. A suitable mechanism is one that (1) uses at run time a copy of the library already present on the user's computer system, rather than copying library functions into the executable, and (2) will operate properly with a modified version of the library, if the user installs one, as long as the modified version is interface-compatible with the version that the work was made with. c) Accompany the work with a written offer, valid for at least three years, to give the same user the materials specified in Subsection 6a, above, for a charge no more than the cost of performing this distribution. d) If distribution of the work is made by offering access to copy from a designated place, offer equivalent access to copy the above specified materials from the same place. e) Verify that the user has already received a copy of these materials or that you have already sent this user a copy. For an executable, the required form of the "work that uses the Library" must include any data and utility programs needed for reproducing the executable from it. However, as a special exception, the materials to be distributed need not include anything that is normally distributed (in either source or binary form) with the major components (compiler, kernel, and so on) of the operating system on which the executable runs, unless that component itself accompanies the executable.

It may happen that this requirement contradicts the license restrictions of other proprietary libraries that do not normally accompany the operating system. Such a contradiction means you cannot use both them and the Library together in an executable that you distribute.

7. You may place library facilities that are a work based on the Library side-by-side in a single library together with other library facilities not covered by this License, and distribute such a combined library, provided that the separate distribution of the work based on the Library and of the other library facilities is otherwise permitted, and provided that you do these two things: a) Accompany the combined library with a copy of the same work based on the Library, uncombined with any other library facilities. This must be distributed under the terms of the Sections above. b) Give prominent notice with the combined library of the fact that part of it is a work based on the Library, and explaining where to find the accompanying uncombined form of the same work.

8. You may not copy, modify, sublicense, link with, or distribute the Library except as expressly provided under this License. Any attempt otherwise to copy, modify, sublicense, link with, or distribute the Library is void, and will automatically terminate your rights under this License. However, parties who have received copies, or rights, from you under this License will not have their licenses terminated so long as such parties remain in full compliance.

9. You are not required to accept this License, since you have not signed it. However, nothing else grants you permission to modify or distribute the Library or its derivative works. These actions are prohibited by law if you do not accept this License. Therefore, by modifying or distributing the Library (or any work based on the Library), you indicate your acceptance of this License to do so, and all its terms and conditions for copying, distributing or modifying the Library or works based on it.

10. Each time you redistribute the Library (or any work based on the Library), the recipient automatically receives a license from the original licensor to copy, distribute, link with or modify the Library subject to these terms and conditions. You may not impose any further restrictions on the recipients' exercise of the rights granted herein. You are not responsible for enforcing compliance by third parties with this License.

11. If, as a consequence of a court judgment or allegation of patent infringement or for any other reason (not limited to patent issues), conditions are imposed on you (whether by court order, agreement or otherwise) that contradict the conditions of this License, they do not excuse you from the conditions of this License. If you cannot distribute so as to satisfy simultaneously your obligations under this License and any other pertinent obligations, then as a consequence you may not distribute the Library at all. For example, if a patent license would not permit royalty-free redistribution of the Library by all those who receive copies directly or indirectly through you, then the only way you could satisfy both it and this License would be to refrain entirely from distribution of the Library. If any portion of this section is held invalid or unenforceable under any particular circumstance, the balance of the section is intended to apply, and the section as a whole is intended to apply in other circumstances. It is not the purpose of this section to induce you to infringe any patents or other property right claims or to contest validity of any such claims; this section has the sole purpose of protecting the integrity of the free software distribution system which is implemented by public license practices. Many people have made generous contributions to the wide range of software distributed through that system in reliance on consistent application of that system; it is up to the author/ donor to decide if he or she is willing to distribute software through any other system and a licensee cannot impose that choice. This section is intended to make thoroughly clear what is believed to be a consequence of the rest of this License.

12. If the distribution and/or use of the Library is restricted in certain countries either by patents or by copyrighted interfaces, the original copyright holder who places the Library under this License may add an explicit geographical distribution limitation excluding those countries, so that distribution is permitted only in or among countries not thus excluded. In such case, this License incorporates the limitation as if written in the body of this License.

13. The Free Software Foundation may publish revised and/or new versions of the Lesser General Public License from time to time. Such new versions will be similar in spirit to the present version, but may differ in detail to address new problems or concerns. Each version is given a distinguishing version number. If the Library specifies a version number of this License which applies to it and "any later version", you have the option of following the terms and conditions either of that version or of any later version published by the Free Software Foundation. If the Library does not specify a license version number, you may choose any version ever published by the Free Software Foundation.

14. If you wish to incorporate parts of the Library into other free programs whose distribution conditions are incompatible with these, write to the author to ask for permission. For software which is copyrighted by the Free Software Foundation, write to the Free Software Foundation; we sometimes make exceptions for this. Our decision will be guided by the two goals of preserving the free status of all derivatives of our free software and of promoting the sharing and reuse of software generally.

NO WARRANTY

15. BECAUSE THE LIBRARY IS LICENSED FREE OF CHARGE, THERE IS NO WARRANTY FOR THE LIBRARY, TO THE EXTENT PERMITTED BY APPLICABLE LAW. EXCEPT WHEN OTHERWISE STATED IN WRITING THE COPYRIGHT HOLDERS AND/OR OTHER PARTIES PROVIDE THE LIBRARY "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THE ENTIRE RISK AS TO THE QUALITY AND PERFORMANCE OF THE LIBRARY IS WITH YOU. SHOULD THE LIBRARY PROVE DEFECTIVE, YOU ASSUME THE COST OF ALL NECESSARY SERVICING, REPAIR OR CORRECTION.

16. IN NO EVENT UNLESS REQUIRED BY APPLICABLE LAW OR AGREED TO IN WRITING WILL ANY COPYRIGHT HOLDER, OR ANY OTHER PARTY WHO MAY MODIFY AND/OR REDISTRIBUTE THE LIBRARY AS PERMITTED ABOVE, BE LIABLE TO YOU FOR DAMAGES, INCLUDING ANY GENERAL, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF THE USE OR INABILITY TO USE THE LIBRARY (INCLUDING BUT NOT LIMITED TO LOSS OF DATA OR DATA BEING RENDERED INACCURATE OR LOSSES SUSTAINED BY YOU OR THIRD PARTIES OR A FAILURE OF THE LIBRARY TO OPERATE WITH ANY OTHER SOFTWARE), EVEN IF SUCH HOLDER OR OTHER PARTY HAS BEEN ADVISED OF THE POSSIBILITY OF SUCHDAMAGES.

END OF TERMS AND CONDITIONS

This Product includes MySQL database and j2sh under GPL

GNU GENERAL PUBLIC LICENSE

Version 2, June 1991

Copyright (C) 1989, 1991 Free Software Foundation, Inc.

59 Temple Place - Suite 330, Boston, MA 02111-1307, USA

Everyone is permitted to copy and distribute verbatim copies of this license document, but changing it is not allowed.

Preamble

The licenses for most software are designed to take away your freedom to share and change it. By contrast, the GNU General Public License is intended to guarantee your freedom to share and change free software--to make sure the software is free for all its users. This General Public License applies to most of the Free Software Foundation's software and to any other program whose authors commit to using it. (Some other Free Software Foundation software is covered by the GNU Library General Public License instead.) You can apply it to your programs, too.

When we speak of free software, we are referring to freedom, not price. Our General Public Licenses are designed to make sure that you have the freedom to distribute copies of free software (and charge for this service if you wish), that you receive source code or can get it if you want it, that you can change the software or use pieces of it in new free programs; and that you know you can do these things.

To protect your rights, we need to make restrictions that forbid anyone to deny you these rights or to ask you to surrender the rights. These restrictions translate to certain responsibilities for you if you distribute copies of the software, or if you modify it. For example, if you distribute copies of such a program, whether gratis or for a fee, you must give the recipients all the rights that you have. You must make sure that they, too, receive or can get the source code. And you must show them these terms so they know their rights.

We protect your rights with two steps: (1) copyright the software, and (2) offer you this license which gives you legal permission to copy, distribute and/or modify the software. Also, for each author's protection and ours, we want to make certain that everyone understands that there is no warranty for this free software. If the software is modified by someone else and passed on, we want its recipients to know that what they have is not the original, so that any problems introduced by others will not reflect on the original authors' reputations.

Finally, any free program is threatened constantly by software patents. We wish to avoid the danger that redistributors of a free program will individually obtain patent licenses, in effect making the program proprietary. To prevent this, we have made it clear that any patent must be licensed for everyone's free use or not licensed at all.

The precise terms and conditions for copying, distribution and modification follow.

TERMS AND CONDITIONS FOR COPYING, DISTRIBUTION AND MODIFICATION

0. This License applies to any program or other work which contains a notice placed by the copyright holder saying it may be distributed under the terms of this General Public License. The "Program", below, refers to any such program or work, and a "work based on the Program" means either the Program or any derivative work under copyright law: that is to say, a work containing the Program or a portion of it, either verbatim or with modifications and/or translated into another language. (Hereinafter, translation is included without limitation in the term "modification".) Each licensee is addressed as "you". Activities other than copying, distribution and modification are not covered by this License; they are outside its scope. The act of running the Program is not restricted, and the output from the Program is covered only if its contents constitute a work based on the Program (independent of having been made by running the Program). Whether that is true depends on what the Program does.

1. You may copy and distribute verbatim copies of the Program's source code as you receive it, in any medium, provided that you conspicuously and appropriately publish on each copy an appropriate copyright notice and disclaimer of warranty; keep intact all the notices that refer to this License and to the absence of any warranty; and give any other recipients of the Program a copy of this License along with the Program. You may charge a fee for the physical act of transferring a copy, and you may at your option offer warranty protection in exchange for a fee.

2. You may modify your copy or copies of the Program or any portion of it, thus forming a work based on the Program, and copy and distribute such modifications or work under the terms of Section 1 above, provided that you also meet all of these conditions:

a) You must cause the modified files to carry prominent notices stating that you changed the files and the date of any change.

b) You must cause any work that you distribute or publish, that in whole or in part contains or is derived from the Program or any part thereof, to be licensed as a whole at no charge to all third parties under the terms of this License.

c) If the modified program normally reads commands interactively when run, you must cause it, when started running for such interactive use in the most ordinary way, to print or display an announcement including an appropriate copyright notice and a notice that there is no warranty (or else, saying that you provide a warranty) and that users may redistribute the program under these conditions, and telling the user how to view a copy of this License. (Exception: if the Program itself is interactive but does not normally print such an announcement, your work based on the Program is not required to print an announcement.)

These requirements apply to the modified work as a whole. If identifiable sections of that work are not derived from the Program, and can be reasonably considered independent and separate works in themselves, then this License, and its terms, do not apply to those sections when you distribute them as separate works. But when you distribute the same sections as part of a whole which is a work based on the Program, the distribution of the whole must be on the terms of this License, whose permissions for other licensees extend to the entire whole, and thus to each and every part regardless of who wrote it. Thus, it is not the intent of this section to claim rights or contest your rights to work written entirely by you; rather, the intent is to exercise the right to control the distribution of derivative or collective works based on the Program. In addition, mere aggregation of another work not based on the Program with the Program (or with a work based on the Program) on a volume of a storage or distribution medium does not bring the other work under the scope of this License.

3. You may copy and distribute the Program (or a work based on it, under Section 2) in object code or executable form under the terms of Sections 1 and 2 above provided that you also do one of the following:

a) Accompany it with the complete corresponding machine-readable source code, which must be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange; or,

b) Accompany it with a written offer, valid for at least three years, to give any third party, for a charge no more than your cost of physically performing source distribution, a complete machine-readable copy of the corresponding source code, to be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange; or, c) Accompany it with the information you received as to the offer to distribute corresponding source code. (This alternative is allowed only for noncommercial distribution and only if you received the program in object code or executable form with such an offer, in accord with Subsection b above.) The source code for a work means the preferred form of the work for making modifications to it. For an executable work, complete source code means all the source code for all modules it contains, plus any associated interface definition files, plus the scripts used to control compilation and installation of the executable. However, as a special exception, the source code distributed need not include anything that is normally distributed (in either source or binary form) with the major components (compiler, kernel, and so on) of the operating system on which the executable runs, unless that component itself accompanies the executable. If distribution of executable or object code is made by offering access to copy from a designated place, then offering equivalent access to copy the source code from the same place counts as distribution of the source code, even though third parties are not compelled to copy the source along with the object code.

4. You may not copy, modify, sublicense, or distribute the Program except as expressly provided under this License. Any attempt otherwise to copy, modify, sublicense or distribute the Program is void, and will automatically terminate your rights under this License. However, parties who have received copies, or rights, from you under this License will not have their licenses terminated so long as such parties remain in full compliance.

5. You are not required to accept this License, since you have not signed it. However, nothing else grants you permission to modify or distribute the Program or its derivative works. These actions are prohibited by law if you do not accept this License. Therefore, by modifying or distributing the Program (or any work based on the Program), you indicate your acceptance of this License to do so, and all its terms and conditions for copying, distributing or modifying the Program or works based on it.

6. Each time you redistribute the Program (or any work based on the Program), the recipient automatically receives a license from the original licensor to copy, distribute or modify the Program subject to these terms and conditions. You may not impose any further restrictions on the recipients' exercise of the rights granted herein. You are not responsible for enforcing compliance by third parties to this License.

7. If, as a consequence of a court judgment or allegation of patent infringement or for any other reason (not limited to patent issues), conditions are imposed on you (whether by court order, agreement or otherwise) that contradict the conditions of this License, they do not excuse you from the conditions of this License. If you cannot distribute so as to satisfy simultaneously your obligations under this License and any other pertinent obligations, then as a consequence you may not distribute the Program at all. For example, if a patent license would not permit royalty-free redistribution of the Program by all those who receive copies directly or indirectly through you, then the only way you could satisfy both it and this License would be to refrain entirely from distribution of the Program. If any portion of this section is held invalid or unenforceable under any particular circumstance, the balance of the section is intended to apply and the section as a whole is intended to apply in other circumstances. It is not the purpose of this section to induce you to infringe any patents or other property right claims or to contest validity of any such claims; this section has the sole purpose of protecting the integrity of the free software distribution system, which is implemented by public license practices. Many people have made generous contributions to the wide range of software distributed through that system in reliance on consistent application of that system; it is up to the author/donor to decide if he or she is willing to distribute software through any other system and a licensee cannot impose that choice. This section is intended to make thoroughly clear what is believed to be a consequence of the rest of this License.

8. If the distribution and/or use of the Program is restricted in certain countries either by patents or by copyrighted interfaces, the original copyright holder who places the Program under this License may add an explicit geographical distribution limitation excluding those countries, so that distribution is permitted only in or among countries not thus excluded. In such case, this License incorporates the limitation as if written in the body of this License.

9. The Free Software Foundation may publish revised and/or new versions of the General Public License from time to time. Such new versions will be similar in spirit to the present version, but may differ in detail to address new problems or concerns. Each version is given a distinguishing version number. If the Program specifies a version number of this License which applies to it and "any later version", you have the option of following the terms and conditions either of that version or of any later version published by the Free Software Foundation. If the Program does not specify a version number of this License, you may choose any version ever published by the Free Software Foundation.

10. If you wish to incorporate parts of the Program into other free programs whose distribution conditions are different, write to the author to ask for permission. For software which is copyrighted by the Free Software Foundation, write to the Free Software Foundation; we sometimes make exceptions for this. Our decision will be guided by the two goals of preserving the free status of all derivatives of our free software and of promoting the sharing and reuse of software generally.

NO WARRANTY

11. BECAUSE THE PROGRAM IS LICENSED FREE OF CHARGE, THERE IS NO WARRANTY FOR THE PROGRAM, TO THE EXTENT PERMITTED BY APPLICABLE LAW. EXCEPT WHEN OTHERWISE STATED IN WRITING THE COPYRIGHT HOLDERS AND/OR OTHER PARTIES PROVIDE THE PROGRAM "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THE ENTIRE RISK AS TO THE QUALITY AND PERFORMANCE OF THE PROGRAM IS WITH YOU. SHOULD THE PROGRAM PROVE DEFECTIVE, YOU ASSUME THE COST OF ALL NECESSARY SERVICING, REPAIR OR CORRECTION.

12. IN NO EVENT UNLESS REQUIRED BY APPLICABLE LAW OR AGREED TO IN WRITING WILL ANY COPYRIGHT HOLDER, OR ANY OTHER PARTY WHO MAY MODIFY AND/OR REDISTRIBUTE THE PROGRAM AS PERMITTED ABOVE, BE LIABLE TO YOU FOR DAMAGES, INCLUDING ANY GENERAL, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF THE USE OR INABILITY TO USE THE PROGRAM (INCLUDING BUT NOT LIMITED TO LOSS OF DATA OR DATA BEING RENDERED INACCURATE OR LOSSES SUSTAINED BY YOU OR THIRD PARTIES OR A FAILURE OF THE PROGRAM TO OPERATE WITH ANY OTHER PROGRAMS), EVEN IF SUCH HOLDER OR OTHER PARTY HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

END OF TERMS AND CONDITIONS

All other trademarks or trade names mentioned herein, if any, are the property of their respective owners.

This Product includes JavaMail 1.3.2 version under the license by Sun Development Network

Copyright 1994-2006 Sun Microsystems, Inc. All Rights Reserved.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

- Redistribution of source code must retain the above copyright notice, this list of conditions and the following disclaimer.
- Redistribution in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.

Neither the name of Sun Microsystems, Inc. or the names of contributors may be used to endorse or promote products derived from this software without specific prior written permission.

This software is provided "AS IS," without a warranty of any kind. ALL EXPRESS OR IMPLIED CONDITIONS, REPRESENTATIONS AND WARRANTIES, INCLUDING ANY IMPLIED WARRANTY OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE OR NON-INFRINGEMENT, ARE HEREBY EXCLUDED. SUN MICROSYSTEMS, INC. ("SUN") AND ITS LICENSORS SHALL NOT BE LIABLE FOR ANY DAMAGES SUFFERED BY LICENSEE AS A RESULT OF USING, MODIFYING OR DISTRIBUTING THIS SOFTWARE OR ITS DERIVATIVES. IN NO EVENT WILL SUN OR ITS LICENSORS BE LIABLE FOR ANY LOST REVENUE, PROFIT OR DATA, OR FOR DIRECT, INDIRECT, SPECIAL, CONSEQUENTIAL, INCIDENTAL OR PUNITIVE DAMAGES, HOWEVER CAUSED AND REGARDLESS OF THE THEORY OF LIABILITY, ARISING OUT OF THE USE OF OR INABILITY TO USE THIS SOFTWARE, EVEN IF SUN HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

You acknowledge that this software is not designed, licensed or intended for use in the design, construction, operation or maintenance of any nuclear facility.

This Product includes JAVA 2 PLATFORM STANDARD EDITION DEVELOPMENT KIT 5.0 1.5.0 version of Java Software technologies

TECHNOLOGY LICENSE FROM SUN MICROSYSTEMS, INC. TO DOUG LEA

Whereas Doug Lea desires to utilize certain Java Software technologies in the util.concurrent technology; and Whereas Sun Microsystems, Inc. ("Sun") desires that Doug Lea utilize certain Java Software technologies in the util.concurrent technology; Therefore the parties agree as follows, effective May 31, 2002:

"Java Software technologies" means

classes/java/util/ArrayList.java, and

classes/java/util/HashMap.java.

The Java Software technologies are Copyright (c) 1994-2000 Sun Microsystems, Inc. All rights reserved.

Sun hereby grants Doug Lea a non-exclusive, worldwide, non-transferrable license to use, reproduce, create derivative works of, and distribute the Java Software and derivative works thereof in source and binary forms as part of a larger work, and to sublicense the right to use, reproduce and distribute the Java Software and Doug Lea's derivative works as the part of larger works through multiple tiers of sublicensees provided that the following conditions are met:

-Neither the name of or trademarks of Sun may be used to endorse or promote products including or derived from the Java Software technology without specific prior written permission; and

-Redistributions of source or binary code must contain the above copyright notice, this notice and the following disclaimers:

THIS SOFTWARE IS PROVIDED "AS IS," WITHOUT A WARRANTY OF ANY KIND. ALL EXPRESS OR IMPLIED CONDITIONS, REPRESENTATIONS AND WARRANTIES, INCLUDING ANY IMPLIED WARRANTY OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE OR NON-INFRINGEMENT, ARE HEREBY EXCLUDED. SUN MICROSYSTEMS, INC. AND ITS LICENSORS SHALL NOT BE LIABLE FOR ANY DAMAGES SUFFERED BY LICENSEE AS A RESULT OF USING, MODIFYING OR

DISTRIBUTING THE SOFTWARE OR ITS DERIVATIVES. IN NO EVENT WILL SUN MICROSYSTEMS, INC. OR ITS LICENSORS BE LIABLE FOR ANY LOST REVENUE, PROFIT OR DATA, OR FOR DIRECT, INDIRECT, SPECIAL, CONSEQUENTIAL, INCIDENTAL OR PUNITIVE DAMAGES, HOWEVER CAUSED AND REGARDLESS OF THE THEORY OF LIABILITY, ARISING OUT OF THE USE OF OR INABILITY TO USE SOFTWARE, EVEN IF SUN MICROSYSTEMS, INC. HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

You acknowledge that Software is not designed, licensed or intended for use in the design, construction, operation or maintenance of any nuclear facility.

signed [Doug Lea] dated

JAVA Software Technologies

Copyright 1994-2000 Sun Microsystems, Inc. All right reserved

JAVA(TM) 2 SOFTWARE DEVELOPMENT KIT (J2SDK), STANDARD EDITION, VERSION 1.4.1_X SUPPLEMENTAL LICENSE TERMS

These supplemental license terms ("Supplemental Terms") add to or modify the terms of the Binary Code License Agreement (collectively, the "Agreement"). Capitalized terms not defined in these Supplemental Terms shall have the same meanings ascribed to them in the Binary Code License Agreement. These Supplemental Terms shall supersede any inconsistent or conflicting terms in the Binary Code License Agreement, or in any license contained within the Software.

1. Software Internal Use and Development License Grant. Subject to the terms and conditions of this Agreement, including, but not limited to Section 4 (Java Technology Restrictions) of these Supplemental Terms, Sun grants you a non-exclusive, non-transferable, limited license without fees to reproduce internally and use internally the binary form of the Software complete and unmodified for the sole purpose of designing, developing, testing, and running your Java applets and applications intended to run on Java-enabled general purpose desktop computers and servers ("Programs").

2. License to Distribute Software. Subject to the terms and conditions of this Agreement, including, but not limited to Section 4 (Java Technology Restrictions) of these Supplemental Terms, Sun grants you a non-exclusive, non-transferable, limited license without fees to reproduce and distribute the Software, provided that (i) you distribute the Software complete and unmodified (unless otherwise specified in the applicable README file) and only bundled as part of, and for the sole purpose of running, your Programs, (ii) the Programs add significant and primary functionality to the Software, (iii) you do not distribute additional software intended to replace any component(s) of the Software (unless otherwise specified in the applicable README file), (iv) you do not remove or alter any proprietary legends or notices contained in the Software, (v) you only distribute the Software subject to a license agreement that protects Sun's interests consistent with the terms contained in this Agreement, and (vi) you agree.

3. License to Distribute Redistributables. Subject to the terms and conditions of this Agreement, including but not limited to Section 4 (Java Technology Restrictions) of these Supplemental Terms, Sun grants you a non-exclusive, non-transferable, limited license without fees to reproduce and distribute those files specifically identified as redistributable in the Software "README" file ("Redistributables") provided that: (i) you distribute the Redistributables complete and unmodified (unless otherwise specified in the applicable README file), and only bundled as part of Programs, (ii) you do not distribute additional

software intended to supersede any component(s) of the Redistributables (unless otherwise specified in the applicable README file), (iii) you do not remove or alter any proprietary legends or notices contained in or on the Redistributables, (iv) you only distribute the Redistributables pursuant to a license agreement that protects Sun's interests consistent with the terms contained in the Agreement.

4. Java Technology Restrictions. You may not modify the Java Platform Interface ("JPI", identified as classes contained within the "java" package or any subpackages of he "java" package), by creating additional classes within the JPI or otherwise causing the addition to or modification of the classes in the JPI. In the event that you create an additional class and associated API(s) which (i) extends the functionality of the Java platform, and (ii) is exposed to third party software developers for the purpose of developing additional software which invokes such additional API, you must promptly publish broadly an accurate specification for such API for free use by all developers. You may not create, or authorize your licensees to create, additional classes, interfaces, or subpackages that are in any way identified as "java", "javax", "sun" or similar convention as specified by Sun in any naming convention designation.

5. Notice of Automatic Software Updates from Sun. You acknowledge that the Software may automatically download, install, and execute applets, applications, software extensions, and updated versions of the Software from Sun ("Software Updates"), which may require you to accept updated terms and conditions for installation. If additional terms and conditions are not presented on installation, the Software Updates will be considered part of the Software and subject to the terms and conditions of the Agreement.

6. Notice of Automatic Downloads. You acknowledge that, by your use of the Software and/or by requesting services that require use of the Software, the Software may automatically download, install, and execute software applications from sources other than Sun ("Other Software"). Sun makes no representations of a relationship of any kind to licensors of Other Software. TO THE EXTENT NOT PROHIBITED BY LAW, IN NO EVENT WILL SUN OR ITS LICENSORS BE LIABLE FOR ANY LOST REVENUE, PROFIT OR DATA, OR FOR SPECIAL, INDIRECT, CONSEQUENTIAL, INCIDENTAL OR PUNITIVE DAMAGES, HOWEVER CAUSED REGARDLESS OF THE THEORY OF LIABILITY, ARISING OUT OF OR RELATED TO THE USE OF OR INABILITY TO USE OTHER SOFTWARE, EVEN IF SUN HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

7. Distribution by Publishers. This section pertains to your distribution of the Software with your printed book or magazine (as those terms are commonly used in the industry) relating to Java technology ("Publication"). Subject to and conditioned upon your compliance with the restrictions and obligations contained in the Agreement, in addition to the license granted in Paragraph 1 above, Sun hereby grants to you a non-exclusive, nontransferable limited right to reproduce complete and unmodified copies of the Software on electronic media (the "Media") for the sole purpose of inclusion and distribution with your Publication(s), subject to the following terms: (i) You may not distribute the Software on a stand-alone basis; it must be distributed with your Publication(s); (ii) You are responsible for downloading the Software from the applicable Sun web site; (iii) You must refer to the Software as JavaTM 2 Software Development Kit, Standard Edition, Version 1.4.1; (iv) The Software must be reproduced in its entirety.

8. Trademarks and Logos. You acknowledge and agree as between you and Sun that Sun owns the SUN, SOLARIS, JAVA, JINI, FORTE, and iPLANET trademarks and all SUN, SOLARIS, JAVA, JINI, FORTE, and iPLANET-related trademarks, service marks, logos and other brand designations ("Sun Marks"), and you agree to comply with the Sun Trademark and Logo Usage Requirements currently located at http://www.sun.com/policies/trademarks. Any use you make of the Sun Marks inures to Sun's benefit.

9. Source Code. Software may contain source code that is provided solely for reference purposes pursuant to the terms of this Agreement. Source code may not be redistributed unless expressly provided for in this Agreement.

10. Termination for Infringement. Either party may terminate this Agreement immediately should any Software become, or in either party's opinion be likely to become, the subject of a claim of infringement of any intellectual property right.

For inquiries please contact: Sun Microsystems, Inc., 4150 Network Circle, Santa Clara, California 95054, U.S.A (LFI#134402/Form ID#011801)

This Product includes Spring 2.0 version under Spring license

Revision 62, 1.5 kB (checked in by jacob, 1 year ago)

Changed name on LICENSE to be lawyerriffic

Line

1 Copyright (c) 2005, the Lawrence Journal-World

2 All rights reserved.

3

4 Redistribution and use in source and binary forms, with or without modification,

5 are permitted provided that the following conditions are met:

6

7 1. Redistributions of source code must retain the above copyright notice,

8 this list of conditions and the following disclaimer.

9

10 2. Redistributions in binary form must reproduce the above copyright

11 notice, this list of conditions and the following disclaimer in the

12 documentation and/or other materials provided with the distribution.

13

14 3. Neither the name of Django nor the names of its contributors may be used

15 to endorse or promote products derived from this software without

16 specific prior written permission.

17

18 THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS" AND

19 ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED

20 WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE

21 DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT OWNER OR CONTRIBUTORS BE LIABLE FOR

22 ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES

23 (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES;

24 LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON

25 ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT

26 (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS

NOTE: Some components of the Vantage CNM 2.3 incorporate source code covered under the Apache License, GPL License, LGPL License, Sun License, and Castor License. To obtain the source code covered under those Licenses, please contact ZyXEL Communications Corporation at ZyXEL Technical Support.

End-User License Agreement for Vantage CNM 2.3

WARNING: ZyXEL Communications Corp. IS WILLING TO LICENSE THE ENCLOSED SOFTWARE TO YOU ONLY UPON THE CONDITION THAT YOU ACCEPT ALL OF THE TERMS CONTAINED IN THIS LICENSE AGREEMENT. PLEASE READ THE TERMS CAREFULLY BEFORE COMPLETING THE INSTALLATION PROCESS AS INSTALLING THE SOFTWARE WILL INDICATE YOUR ASSENT TO THEM. IF YOU DO NOT AGREE TO THESE TERMS, THEN ZyXEL, INC. IS UNWILLING TO LICENSE THE SOFTWARE TO YOU, IN WHICH EVENT YOU SHOULD RETURN THE UNINSTALLED SOFTWARE AND PACKAGING TO THE PLACE FROM WHICH IT WAS ACQUIRED, AND YOUR MONEY WILL BE REFUNDED.

1. Grant of License for Personal Use

ZyXEL Communications Corp. ("ZyXEL") grants you a non-exclusive, non-sublicense, non-transferable license to use the program with which this license is distributed (the "Software"), including any documentation files accompanying the Software ("Documentation"), for internal business use only, for up to the number of users specified in sales order and invoice. You have the right to make one backup copy of the Software and Documentation solely for archival, back-up or disaster recovery purposes. You shall not exceed the scope of the license granted hereunder. Any rights not expressly granted by ZyXEL to you are reserved by ZyXEL, and all implied licenses are disclaimed.

2. Ownership

You have no ownership rights in the Software. Rather, you have a license to use the Software as long as this License Agreement remains in full force and effect. Ownership of the Software, Documentation and all intellectual property rights therein shall remain at all times with ZyXEL. Any other use of the Software by any other entity is strictly forbidden and is a violation of this License Agreement.

3. Copyright

The Software and Documentation contain material that is protected by United States Copyright Law and trade secret law, and by international treaty provisions. All rights not granted to you herein are expressly reserved by ZyXEL. You may not remove any proprietary notice of ZyXEL or any of its licensors from any copy of the Software or Documentation.

4. Restrictions

You may not publish, display, disclose, sell, rent, lease, modify, store, loan, distribute, or create derivative works of the Software, or any part thereof. You may not assign, sublicense, convey or otherwise transfer, pledge as security or otherwise encumber the rights and licenses granted hereunder with respect to the Software. You may not copy, reverse engineer, decompile, reverse compile, translate, adapt, or disassemble the Software, or any part thereof, nor shall you attempt to create the source code from the object code for the Software. You may not market, co-brand, private label or otherwise permit third parties to link to the Software, or any part thereof. You may not use the Software, or any part thereof, in the operation of a service bureau or for the benefit of any other person or entity. You may not cause, assist or permit any third party to do any of the foregoing.

5. Confidentiality

You acknowledge that the Software contains proprietary trade secrets of ZyXEL and you hereby agree to maintain the confidentiality of the Software using at least as great a degree of care as you use to maintain the confidentiality of your own most confidential information. You agree to reasonably communicate the terms and conditions of this License Agreement to those persons employed by you who come into contact with the Software, and to use reasonable best efforts to ensure their compliance with such terms and conditions, including, without limitation, not knowingly permitting such persons to use any portion of the Software for the purpose of deriving the source code of the Software.

6. No Warranty

THE SOFTWARE IS PROVIDED "AS IS." TO THE MAXIMUM EXTENT PERMITTED BY LAW, ZyXEL DISCLAIMS ALL WARRANTIES OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING, WITHOUT LIMITATION, IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. ZyXEL DOES NOT WARRANT THAT THE FUNCTIONS CONTAINED IN THE SOFTWARE WILL MEET ANY REQUIREMENTS OR NEEDS YOU MAY HAVE, OR THAT THE SOFTWARE WILL OPERATE ERROR FREE, OR IN AN UNINTERUPTED FASHION, OR THAT ANY DEFECTS OR ERRORS IN THE SOFTWARE WILL BE CORRECTED, OR THAT THE SOFTWARE IS COMPATIBLE WITH ANY PARTICULAR PLATFORM. SOME JURISDICTIONS DO NOT ALLOW THE WAIVER OR EXCLUSION OF IMPLIED WARRANTIES SO THEY MAY NOT APPLY TO YOU. IF THIS EXCLUSION IS HELD TO BE UNENFORCEABLE BY A COURT OF COMPETENT JURISDICTION, THEN ALL EXPRESS AND IMPLIED WARRANTIES SHALL BE LIMITED IN DURATION TO A PERIOD OF THIRTY (30) DAYS FROM THE DATE OF PURCHASE OF THE SOFTWARE, AND NO WARRANTIES SHALL APPLY AFTER THAT PERIOD.

7. Limitation of Liability

IN NO EVENT WILL ZyXEL BE LIABLE TO YOU OR ANY THIRD PARTY FOR ANY INCIDENTAL OR CONSEQUENTIAL DAMAGES (INCLUDING, WITHOUT LIMITATION, INDIRECT, SPECIAL, PUNITIVE, OR EXEMPLARY DAMAGES FOR LOSS OF BUSINESS, LOSS OF PROFITS, BUSINESS INTERRUPTION, OR LOSS OF

BUSINESS INFORMATION) ARISING OUT OF THE USE OF OR INABILITY TO USE THE PROGRAM, OR FOR ANY CLAIM BY ANY OTHER PARTY, EVEN IF ZyXEL HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES. ZyXEL'S AGGREGATE LIABILITY WITH RESPECT TO ITS OBLIGATIONS UNDER THIS AGREEMENT OR OTHERWISE WITH RESPECT TO THE SOFTWARE AND DOCUMENTATION OR OTHERWISE SHALL BE EQUAL TO THE PURCHASE PRICE, BUT SHALL IN NO EVENT EXCEED $1,000. BECAUSE SOME STATES/COUNTRIES DO NOT ALLOW THE EXCLUSION OR LIMITATION OF LIABILITY FOR CONSEQUENTIAL OR INCIDENTAL DAMAGES, THE ABOVE LIMITATION MAY NOT APPLY TO YOU.

8. Export Restrictions

THIS LICENSE AGREEMENT IS EXPRESSLY MADE SUBJECT TO ANY APPLICABLE LAWS, REGULATIONS, ORDERS, OR OTHER RESTRICTIONS ON THE EXPORT OF THE SOFTWARE OR INFORMATION ABOUT SUCH SOFTWARE WHICH MAY BE IMPOSED FROM TIME TO TIME. YOU SHALL NOT EXPORT THE SOFTWARE, DOCUMENTATION OR INFORMATION ABOUT THE SOFTWARE AND DOCUMENTATION WITHOUT COMPLYING WITH SUCH LAWS, REGULATIONS, ORDERS, OR OTHER RESTRICTIONS. YOU AGREE TO INDEMNIFY ZyXEL AGAINST ALL CLAIMS, LOSSES, DAMAGES, LIABILITIES, COSTS AND EXPENSES, INCLUDING REASONABLE ATTORNEYS' FEES, TO THE EXTENT SUCH CLAIMS ARISE OUT OF ANY BREACH OF THIS SECTION 8.

9. Audit Rights

ZyXEL SHALL HAVE THE RIGHT, AT ITS OWN EXPENSE, UPON REASONABLE PRIOR NOTICE, TO PERIODICALLY INSPECT AND AUDIT YOUR RECORDS TO ENSURE YOUR COMPLIANCE WITH THE TERMS AND CONDITIONS OF THIS LICENSE AGREEMENT.

10. Termination

This License Agreement is effective until it is terminated. You may terminate this License Agreement at any time by destroying or returning to ZyXEL all copies of the Software and Documentation in your possession or under your control. ZyXEL may terminate this License Agreement for any reason, including, but not limited to, if ZyXEL finds that you have violated any of the terms of this License Agreement. Upon notification of termination, you agree to destroy or return to ZyXEL all copies of the Software and Documentation and to certify in writing that all known copies, including backup copies, have been destroyed. All provisions relating to confidentiality, proprietary rights, and non-disclosure shall survive the termination of this Software License Agreement.

12. General

This License Agreement shall be construed, interpreted and governed by the laws of Republic of China without regard to conflicts of laws provisions thereof. The exclusive forum for any disputes arising out of or relating to this License Agreement shall be an appropriate court or Commercial Arbitration Association sitting in ROC, Taiwan. This License Agreement shall constitute the entire Agreement between the parties hereto. This License Agreement, the rights granted hereunder, the Software and Documentation shall not be assigned by you without the prior written consent of ZyXEL. Any waiver or modification of this License Agreement shall

only be effective if it is in writing and signed by both parties hereto. If any part of this License Agreement is found invalid or unenforceable by a court of competent jurisdiction, the remainder of this License Agreement shall be interpreted so as to reasonably effect the intention of the parties.

I

Legal Information

Copyright

Copyright © 2007 by ZyXEL Communications Corporation.

The contents of this publication may not be reproduced in any part or as a whole, transcribed, stored in a retrieval system, translated into any language, or transmitted in any form or by any means, electronic, mechanical, magnetic, optical, chemical, photocopying, manual, or otherwise, without the prior written permission of ZyXEL Communications Corporation.

Published by ZyXEL Communications Corporation. All rights reserved.

Disclaimer

ZyXEL does not assume any liability arising out of the application or use of any products, or software described herein. Neither does it convey any license under its patent rights nor the patent rights of others. ZyXEL further reserves the right to make changes in any products described herein without notice. This publication is subject to change without notice.

Trademarks

ZyNOS (ZyXEL Network Operating System) is a registered trademark of ZyXEL Communications, Inc. Other trademarks mentioned in this publication are used for identification purposes only and may be properties of their respective owners.

ZyXEL Limited Warranty

ZyXEL warrants to the original end user (purchaser) that this product is free from any defects in materials or workmanship for a period of up to two years from the date of purchase. During the warranty period, and upon proof of purchase, should the product have indications of failure due to faulty workmanship and/or materials, ZyXEL will, at its discretion, repair or replace the defective products or components without charge for either parts or labor, and to whatever extent it shall deem necessary to restore the product or components to proper operating condition. Any replacement will consist of a new or re-manufactured functionally equivalent product of equal or higher value, and will be solely at the discretion of ZyXEL. This warranty shall not apply if the product has been modified, misused, tampered with, damaged by an act of God, or subjected to abnormal working conditions.

Note

Repair or replacement, as provided under this warranty, is the exclusive remedy of the purchaser. This warranty is in lieu of all other warranties, express or implied, including any implied warranty of merchantability or fitness for a particular use or purpose. ZyXEL shall in no event be held liable for indirect or consequential damages of any kind to the purchaser.

To obtain the services of this warranty, contact ZyXEL's Service Center for your Return Material Authorization number (RMA). Products must be returned Postage Prepaid. It is recommended that the unit be insured when shipped. Any returned products without proof of purchase or those with an out-dated warranty will be repaired or replaced (at the discretion of ZyXEL) and the customer will be billed for parts and labor. All repaired or replaced products will be shipped by ZyXEL to the corresponding return address, Postage Paid. This warranty gives you specific legal rights, and you may also have other rights that vary from country to country.

Registration

Register your product online to receive e-mail notices of firmware upgrades and information at www.zyxel.com for global products, or at www.us.zyxel.com for North American products.

J

Customer Support

Please have the following information ready when you contact customer support.

Required Information

- Product model and serial number.
- Warranty Information.
- Date that you received your device.
- Brief description of the problem and the steps you took to solve it.

"+" is the (prefix) number you dial to make an international telephone call.

Corporate Headquarters (Worldwide)

- Support E-mail: support@zyxel.com.tw
- Sales E-mail: sales@zyxel.com.tw
- Telephone: +886-3-578-3942
- Fax: +886-3-578-2439
- Web: www.zyxel.com, www.europe.zyxel.com
- FTP: ftp.zyxel.com, ftp.europe.zyxel.com
- Regular Mail: ZyXEL Communications Corp., 6 Innovation Road II, Science Park, Hsinchu 300, Taiwan

Costa Rica

- Support E-mail: soporte@zyxel.co.cr
- Sales E-mail: sales@zyxel.co.cr
- Telephone: +506-2017878
- Fax: +506-2015098
- Web: www.zyxel.co.cr
- FTP: ftp.zyxel.co.cr
- Regular Mail: ZyXEL Costa Rica, Plaza Roble Escazú, Etapa El Patio, Tercer Piso, San José, Costa Rica

Czech Republic

- E-mail: info@cz.zyxel.com
- Telephone: +420-241-091-350
- Fax: +420-241-091-359
- Web: www.zyxel.cz

- Regular Mail: ZyXEL Communications, Czech s.r.o., Modranská 621, 143 01 Praha 4 - Modrany, Ceská Republika

Denmark

- Support E-mail: support@zyxel.dk
- Sales E-mail: sales@zyxel.dk
- Telephone: +45-39-55-07-00
- Fax: +45-39-55-07-07
- Web: www.zyxel.dk
- Regular Mail: ZyXEL Communications A/S, Columbusvej, 2860 Soeborg, Denmark

Finland

- Support E-mail: support@zyxel.fi
- Sales E-mail: sales@zyxel.fi
- Telephone: +358-9-4780-8411
- Fax: +358-9-4780-8448
- Web: www.zyxel.fi
- Regular Mail: ZyXEL Communications Oy, Malminkaari 10, 00700 Helsinki, Finland

France

- E-mail: info@zyxel.fr
- Telephone: +33-4-72-52-97-97
- Fax: +33-4-72-52-19-20
- Web: www.zyxel.fr
- Regular Mail: ZyXEL France, 1 rue des Vergers, Bat. 1 / C, 69760 Limonest, France

Germany

- Support E-mail: support@zyxel.de
- Sales E-mail: sales@zyxel.de
- Telephone: +49-2405-6909-69
- Fax: +49-2405-6909-99
- Web: www.zyxel.de
- Regular Mail: ZyXEL Deutschland GmbH., Adenauerstr. 20/A2 D-52146, Wuerselen, Germany

Hungary

- Support E-mail: support@zyxel.hu
- Sales E-mail: info@zyxel.hu
- Telephone: +36-1-3361649
- Fax: +36-1-3259100
- Web: www.zyxel.hu
- Regular Mail: ZyXEL Hungary, 48, Zoldlomb Str., H-1025, Budapest, Hungary

India

- Support E-mail: support@zyxel.in
- Sales E-mail: sales@zyxel.in
- Telephone: +91-11-30888144 to +91-11-30888153
- Fax: +91-11-30888149, +91-11-26810715
- Web: http://www.zyxel.in
- Regular Mail: India - ZyXEL Technology India Pvt Ltd., II-Floor, F2/9 Okhla Phase -1, New Delhi 110020, India

Japan

- Support E-mail: support@zyxel.co.jp
- Sales E-mail: zyp@zyxel.co.jp
- Telephone: +81-3-6847-3700
- Fax: +81-3-6847-3705
- Web: www.zyxel.co.jp
- Regular Mail: ZyXEL Japan, 3F, Office T&U, 1-10-10 Higashi-Gotanda, Shinagawa-ku, Tokyo 141-0022, Japan

Kazakhstan

- Support: http://zyxel.kz/support
- Sales E-mail: sales@zyxel.kz
- Telephone: +7-3272-590-698
- Fax: +7-3272-590-689
- Web: www.zyxel.kz
- Regular Mail: ZyXEL Kazakhstan, 43 Dostyk Ave., Office 414, Dostyk Business Centre, 050010 Almaty, Republic of Kazakhstan

Malaysia

- Support E-mail: support@zyxel.com.my
- Sales E-mail: sales@zyxel.com.my
- Telephone: +603-8076-9933
- Fax: +603-8076-9833
- Web: http://www.zyxel.com.my
- Regular Mail: ZyXEL Malaysia Sdn Bhd., 1-02 & 1-03, Jalan Kenari 17F, Bandar Puchong Jaya, 47100 Puchong, Selangor Darul Ehsan, Malaysia

North America

- Support E-mail: support@zyxel.com
- Support Telephone: +1-800-978-7222
- Sales E-mail: sales@zyxel.com
- Sales Telephone: +1-714-632-0882
- Fax: +1-714-632-0858
- Web: www.zyxel.com

- Regular Mail: ZyXEL Communications Inc., 1130 N. Miller St., Anaheim, CA 92806-2001, U.S.A.

Norway

- Support E-mail: support@zyxel.no
- Sales E-mail: sales@zyxel.no
- Telephone: +47-22-80-61-80
- Fax: +47-22-80-61-81
- Web: www.zyxel.no
- Regular Mail: ZyXEL Communications A/S, Nils Hansens vei 13, 0667 Oslo, Norway

Poland

- E-mail: info@pl.zyxel.com
- Telephone: +48-22-333 8250
- Fax: +48-22-333 8251
- Web: www.pl.zyxel.com
- Regular Mail: ZyXEL Communications, ul. Okrzei 1A, 03-715 Warszawa, Poland

Russia

- Support: http://zyxel.ru/support
- Sales E-mail: sales@zyxel.ru
- Telephone: +7-095-542-89-29
- Fax: +7-095-542-89-25
- Web: www.zyxel.ru
- Regular Mail: ZyXEL Russia, Ostrovityanova 37a Str., Moscow 117279, Russia

Singapore

- Support E-mail: support@zyxel.com.sg
- Sales E-mail: sales@zyxel.com.sg
- Telephone: +65-6899-6678
- Fax: +65-6899-8887
- Web: http://www.zyxel.com.sg
- Regular Mail: ZyXEL Singapore Pte Ltd., No. 2 International Business Park, The Strategy #03-28, Singapore 609930

Spain

- Support E-mail: support@zyxel.es
- Sales E-mail: sales@zyxel.es
- Telephone: +34-902-195-420
- Fax: +34-913-005-345
- Web: www.zyxel.es
- Regular Mail: ZyXEL Communications, Arte, 21 5ª planta, 28033 Madrid, Spain

Sweden

- Support E-mail: support@zyxel.se
- Sales E-mail: sales@zyxel.se
- Telephone: +46-31-744-7700
- Fax: +46-31-744-7701
- Web: www.zyxel.se
- Regular Mail: ZyXEL Communications A/S, Sjöporten 4, 41764 Göteborg, Sweden

Thailand

- Support E-mail: support@zyxel.co.th
- Sales E-mail: sales@zyxel.co.th
- Telephone: +662-831-5315
- Fax: +662-831-5395
- Web: http://www.zyxel.co.th
- Regular Mail: ZyXEL Thailand Co., Ltd., 1/1 Moo 2, Ratchaphruk Road, Bangrak-Noi, Muang, Nonthaburi 11000, Thailand.

Ukraine

- Support E-mail: support@ua.zyxel.com
- Sales E-mail: sales@ua.zyxel.com
- Telephone: +380-44-247-69-78
- Fax: +380-44-494-49-32
- Web: www.ua.zyxel.com
- Regular Mail: ZyXEL Ukraine, 13, Pimonenko Str., Kiev 04050, Ukraine

United Kingdom

- Support E-mail: support@zyxel.co.uk
- Sales E-mail: sales@zyxel.co.uk
- Telephone: +44-1344-303044, 08707-555779 (UK only)
- Fax: +44-1344-303034
- Web: www.zyxel.co.uk
- FTP: ftp.zyxel.co.uk
- Regular Mail: ZyXEL Communications UK Ltd., 11 The Courtyard, Eastern Road, Bracknell, Berkshire RG12 2XB, United Kingdom (UK)

Index

A

administrators
  idle timeout 302
  maximum number logged in 302
  root 329
  storing in address book 315
  super 329
  types of 329
alarms 271
  classifications 271
  clearing 272
  notifying device owners 303, 304
  states 272
  types of 271
alternative subnet mask notation 369

B

backing up (CNM configuration) 313
building blocks
  applying 53, 228, 229, 232, 249, 250
  saving current configuration as 53, 228, 229, 232, 249, 250

C

certificate 308
configuration files 214
contact information 419
copyright 417
create a group folder 39
customer support 419

D

delete a device group 40
device owners
  alarms 303, 304
  notifications 303, 304
  storing in address book 315
device search 45
device window 35, 37
  search 45
  topology 37
  unassociate a device 44
devices 40
  activating subscription services 241
  firmware 235, 237, 267, 269, 279
  group configuration 281, 284, 286
  icons 40
  inconsistencies with CNM 213
  registering on myzyxel.com 241
  setting up for Vantage Report 307
disclaimer 417

E

e-mail
  SMTP server 299
encryption
  WEP 103

F

firmware
  uploading to devices 235, 237, 267, 269, 279
folders
  icons 38
  right-click 39
FTP server 299
Full Mesh 251, 252
function window 45

G

group configuration 281, 284, 286

H

Hub & Spoke **251**, **252**

I

IANA **374**
icons
  devices **40**
  folders **38**
  views **38**
idle timeout **36**, **302**
IE 7.0 security risk messages **48**
inconsistencies between CNM and device **213**
Internet Assigned Numbers Authority
  See IANA **374**
IP address **299**, **301**

L

License
  Upgrade **319**
license
  status **317**
  upgrade **320**
log messages **291**

M

managing Vantage CNM
  good habits **32**
maximum number of online users **302**
menu bar **35**
myzyxel.com **241**

N

NAT **374**
navigation panel **35**, **45**
notifications **303**, **304**
  SMTP server **299**

O

object pane
  devices **40**

P

product registration **418**

R

registration
  product **418**
related documentation **3**
Remote Access **251**, **252**
remove a group folder **40**
report window **35**
restoring (CNM configuration) **313**
rom files. See configuration files. **214**
root administrator **329**

S

search a device **45**
security timeout **36**
signatures
  backing up **224**
  managing **224**
  monitoring **245**
  restoring **224**
  updating **245**
SMTP server **299**
status monitor **288**, **289**
subnet **367**
subnet mask **368**
subnetting **370**
subscription services
  activating **245**
  monitoring licenses **244**
  notifications **303**, **304**
  upgrading **245**
super administrators **329**
syntax conventions **5**
system
  certificate **308**
  log messages **291**

status 317
system status
monitor 288, 289

T

title bar 35, 36, 37
topology 37
create a group folder 39
delete a groupl 40
remove a group folder 40
trademarks 417

U

unassociate a device 44
User Lockout 303

V

Vantage Report 306
in Vantage CNM 294
opening in Vantage CNM 295
setting up 294
setting up devices for 307
setting up instances of 306
typical application 293
views
icons 38
VPN
pre-shared key 252
VPN Community 249
Installation Report 255

W

warranty 417
note 418
web configurator 35
device window 37
devices 40
function window 45
icons 36, 37
timeout 36
title bar 36, 37
WEP encryption 105, 106